

Ministry of Education and Science of Ukraine
Sumy National Agrarian University
Biological and technological faculty
Department of feed technology and animal feeding

MODULE SYLLABUS

Food Nutrition and Technology (selective)
Implemented within the Technologies in aquaculture educational program

specialty 204 - Technology of production and processing of animal husbandry products
at the second (master's) level of higher education

Sumy - 2024

Developer: **Oleksandr MYKHALKO**, associate professor of the Department of Feed Technology and Animal Feeding

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| Considered, approved and approved at the meeting of the Department of Feed Technology and Animal Feeding | Minutes No10 dated 06.06.2024 |
| | Head department <u></u> <u>Viktor OPARA</u> (signature) (surname, initials) |

Agreed:

Guarantor of the educational program

Viktoriia VECHORKA

Dean
Biological and technological faculty

Viktoriia VECHORKA

A review of the work program (attached) is provided:

(Full name)

(Full name)

Methodist of the Education Quality Department,
licensing and accreditation

(Full name)

Registered in the electronic database: date:18.04.2024

Syllabus review data:

| The academic year in which changes are made | The Academic program attachment number with changes description | The changes were reviewed and approved | | |
|---|---|---|--------------------|-----------------------------------|
| | | Minutes No and date of the department meeting | Head of Department | Guarantor of the Academic program |
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1. MODULE OVERVIEW

| | | | | | | | |
|------|--|--|------------|-------------------|------------|------------------|------------|
| 1. | The name is OK | Food Nutrition and Technology | | | | | |
| 2. | Faculty/department | Biological-technological/Forage and animal feeding technologies | | | | | |
| 3. | The status is OK | Selective | | | | | |
| 4. | Program/Specialty (programs), the component of which is OK for | Technologies in aquaculture | | | | | |
| 5. | OK can be offered for | 204 Technology of production and processing of animal husbandry products 207 Aquatic biological resources and aquaculture | | | | | |
| 6. | NRK level | seventh | | | | | |
| 7. | Semester and duration of study | the second, 11 weeks | | | | | |
| 8. | Number of ECTS credits | 5 | | | | | |
| 9. | The total number of hours and their distribution | Contact work (class) | | | | | |
| | | Lectures | | Practical/seminar | | Independent work | |
| | | daytime | extramural | daytime | extramural | daytime | extramural |
| | | 22 | - | 22 | - | - | 106 |
| 10. | Language of education | Ukrainian | | | | | |
| 11. | Teacher/Coordinator of the educational component | Mykhalko Oleksandr Gryhorovych | | | | | |
| 11.1 | Contact Information | Associate Professor of the Department of Feed Technology and Animal Feeding office 322 of the main building email address: snau.cz@ukr.net consultations: every Tuesday 14 ⁰⁰ -15 ⁰⁰ . | | | | | |
| 12. | General description of the educational component | The educational component studies the main topics about food, biological value, the nutritional role of amino acids, polyunsaturated fatty acids, dietary (healing) properties of fish and seafood, the current state of the industry of fish processing and fish raw materials and prospects for its development, the composition, properties and nutritional value of fish and non-fish seafood, mechanical and hydromechanical processing of fish, the influence of heat treatment methods and regimes on changes in physico-chemical parameters and biological value of fish and non-fish seafood, fish cooling technology, fish freezing technology, physico-chemical changes in hydrobionts during storage, study of changes in physico- chemical properties | | | | | |

| | | |
|-----|---|--|
| | | in the process of culinary processing of hydrobionts, classification of culinary products from hydrobionts according to aggregate characteristics, technology of fish dishes, boiled and steamed fish dishes, fried, stewed, baked fish dishes. |
| 13. | The purpose of the educational component | <p>Educational component: It is aimed at deepening students' knowledge about the nutritional and biological value, the nutritional role of amino acids, polyunsaturated fatty acids, dietary (healing) properties of fish and seafood.</p> <p>To acquire skills regarding the recommendations and use of fish and seafood in rational (healthy) nutrition of different age groups of the population and in dietary (medicinal) nutrition.</p> <p>To master the methodology of solving practical tasks (tasks) regarding the evaluation of nutritional and biological value of fish and seafood for analysis and conclusions regarding possible recommendations for use in rational and dietary (medicinal) nutrition of the population.</p> <p>To be able to choose methods of technological processing of fish for further use in the necessary technological process for obtaining fish products with specified organoleptic and physico-chemical indicators of quality and safety.</p> <p>- aimed at mastering a wide range of modern The educational component is aimed at achieving professional program competences, which is realized through disciplinary learning outcomes, in particular the ability to determine the necessary direction.</p> |
| 14. | Prerequisites for studying OK, connection with other educational components of OP | The educational component is based on the educational components "Aquaculture production technology" |
| 15. | Policy of academic integrity | <p>The policy of academic integrity at SNAU is governed by the Code of Academic Integrity http://docs.snau.edu.ua/documents/education/quality/kodeks_akadem_dobrochesnosti.pdf</p> <p>In accordance with it, the requirements for the student to observe academic integrity during the study of the educational component are as follows:</p> <p>to be responsible for one's duties, to fulfill the tasks prescribed by the educational program on time and in good faith; to be present at all classes; perform independent work; honestly and responsibly prepare for current, modular and</p> |

| | | |
|-----|---|---|
| | | <p>final control; submit for assessment only self-made work.</p> <p>It is unacceptable for a student to:</p> <p>show a disrespectful and incorrect attitude towards the teacher; being late for classes and missing them without valid reasons; during the educational process, use hints, other people's work, telephones; provide and receive assistance from third parties during current, modular and final control; receive or offer a bribe for receiving any benefits in educational activities.</p> <p>For violating the rules of academic integrity, students may be held liable for the following forms of responsibility:</p> <ul style="list-style-type: none"> - repeated assessment (test, exam, credit, etc.); - repeated completion of the training course; - warning; - issuing a reprimand; - expulsion from the university (Part 5 of Article 48 of the Law of Ukraine "On Education"); |
| 16. | Link to the course in the Moodle system | |

2. LEARNING RESULTS UNDER THE EDUCATIONAL COMPONENT AND THEIR RELATIONSHIP WITH PROGRAM LEARNING OUTCOMES

| Study results for OK: | How RND is estimated |
|--|----------------------------|
| LO 1 Evaluate the properties of basic nutrients and food products | Essay |
| LO 2 To know the scientific and theoretical foundations of classical and modern technological processes and ways of their practical implementation. | Report |
| LO 3 Be able to independently and/or collectively make non-standard decisions of a work nature, generate new ideas and implement them in practical activities | Report, testing |
| LO 4 Apply the main research methods of physico-chemical, chemical, biochemical, microbiological processes, generalize them and connect them with practical application according to the specialty profile | Research proposal, testing |
| LO 5 Present the results of scientific and industrial tests in the form of scientific articles and abstracts of conferences | Testing |

3. CONTENTS OF THE EDUCATIONAL COMPONENT (COURSE PROGRAM)

| Topic. List of issues to be considered within the topic | Distribution within the general time budget Correspondence form | | | Recomm ended Books |
|---|---|----|-----|-------------------------------------|
| | Auditory work | | SRS | |
| | Lk | Pz | | |
| Topic 1 The current state of the fish processing industry and fish raw materials and prospects for its development 1. Overview of the current state of the fish processing industry 2. Prospects for the development of the fish processing industry | 2 | 2 | 4 | 1, 2, 3, 4, 5, 6, 7 |
| Topic 2 Composition, properties and nutritional value of fish and non-fish seafood 1. Chemical composition and energy value of some types of fish 2. Classification of fish | 2 | 2 | 4 | 1, 2, 3, 4, 5 |
| Topic 3 Mechanical and hydromechanical processing of fish 1. Processing of semi-finished carcass 2. Preparation of portioned semi-finished products 3. Waste treatment | 2 | 2 | 4 | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 |
| Topic 4 Influence of methods and modes of heat treatment on changes in physico-chemical parameters and biological value of fish and non-fish seafood 1. The influence of methods and modes of heat treatment on changes in physical and chemical parameters 2. Change in the biological value of fish and non-fish seafood | 2 | 2 | 4 | 1, 2, 4, 5, 12, 13 |
| Topic 5 Fish cooling technology Plan 1. Cooling of fish with liquid 2. Cooling fish under vacuum | 2 | 2 | 4 | 1, 2, 3, 4, 5, 7, 10 |
| Topic 6. Fish freezing technology 1. Conditions for freezing fish 2. Method of freezing fish and non-fish products 3. Duration of freezing | 2 | 2 | 4 | 1, 2, 4, 5, 7, 11 |
| Topic 7 Physico-chemical changes of hydrobionts during storage 1. Physico-chemical processes in fish meat 2. Processes occurring during refrigeration processing and storage of fish | 2 | 2 | 4 | 1, 2, 3, 4, 5, 8 |
| Topic 8 Study of changes in physicochemical properties in the process of cooking hydrobionts 1. Preparation of semi-finished carcass for cooking and braising 2. Thermal culinary processing of fish | 2 | 2 | 4 | 1, 2, 3, 4, 6, 12, 14 |
| Topic 9 Classification of culinary products from hydrobionts according to aggregate characteristics 1. Classification of culinary products 2. Preparation for cooking seafood and crayfish | 2 | 2 | 4 | 1, 2, 3, 4, 5, 8, 9, 12 |
| Topic 10 Technology of fish dishes 1. Production of semi-finished products from fish | 2 | 2 | 4 | 2, 3, 4, 5, 8, 9, 10 |

| Topic. List of issues to be considered within the topic | Distribution within the general time budget Correspondence form | | | Recommended Books |
|--|--|-----------|------------|---|
| | Auditory work | | SRS | |
| | Lk | Pz | | |
| 2. Preparation of natural, breaded or chopped semi-finished fish carcasses | | | | |
| Topic 11. Dishes from boiled, steamed fish. Fried, stewed, baked fish dishes 1. Cooking and stewing fish 2. Stewing, frying and baking fish 3. Processing of non-fish seafood. Non-fish seafood dishes | | | 8 | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15 |
| That's all | 22 | 22 | 106 | |

4. TEACHING AND LEARNING METHODS

| DRN | Teaching methods (work to be carried out by the teacher during classroom classes, consultations) | Number of hours | Study methods (what types of educational activities should the student perform independently) | Number of hours |
|------|--|-----------------|--|-----------------|
| DRN1 | Educational lecture (narration, explanation, demonstration, illustration) Practical lesson (explanation, demonstration) | 4 | Working with lecture notes, working with books, working with regulatory and legal acts, generalization, systematization, deepening of the material, calculations, development of a civil protection plan | 4 |
| DRN2 | Educational lecture (narration, explanation, demonstration, illustration) Practical lesson (explanation, demonstration) | 36 | Working with lecture notes, working with books, working with regulatory and legal acts, generalization, systematization, deepening of the material, calculations | 92 |
| DRN3 | Educational lecture (narration, explanation, demonstration, illustration) Practical lesson (explanation, demonstration) | 4 | Working with lecture notes, working with books, working with regulatory and legal acts, generalization, systematization, deepening of the material, calculations | 10 |

5.1.1. 5. ASSESSMENT

5.1.2. Diagnostic assessment (specified as necessary)

5.2 Summative assessment

5.2.1 Intended learning outcomes methods:

| No | Methods of summative assessment | Points / Weight in the overall assessment | Compilation date |
|----|---------------------------------|---|----------------------|
| 1. | Essay, Topic 1 | 15/15% | 5th semester, 3 week |

| | | | |
|----|-------------------------------------|--------|--------------------------|
| 2. | Written test, Topic 1-5 | 10/10% | 5th semester, 4 week |
| 3. | Intermediate attestation, Topic 1-5 | 15/15% | 5th semester, 4 week |
| 4. | Report, Topic 6-8 | 15/15% | 5th semester, 6 week |
| 5. | written test, Topic 6-11 | 10/10% | 5th semester, 7 week |
| 6. | research proposal, Topic 11 | 25/25% | 5th semester, 11 week |

5.2.2. Grading criteria

| Component | Unsatisfactorily | Satisfactorily | Fine | Perfectly |
|----------------------------|---|--|--|--|
| Essay, Topic 1 | <9 points | 9-11 points | 12-13 points | 14-15 points |
| | Task requirements not met | Most of the requirements are fulfilled, but some parts are missing, there is no analysis of the received data | All requirements of the task have been fulfilled | All the requirements of the task were fulfilled, the obtained results were clearly interpreted, proposals were made regarding the application of diversification to increase the sustainable development of aquaculture and its consequences for the fish farm |
| Written test, Topic 1-5 | <5 points | 5-6 points | 7-8 points | 9-10 points |
| | Fewer than 6 correct answers to a test question | 6-9 correct answers to the test questions | 10-12 correct answers to the test questions | 13-15 correct answers to the test questions |
| Intermediate certification | <9 points | 9-11 points | 12-13 points | 14-15 points |
| | Fewer than 6 correct answers to a test question | 6-9 correct answers to the test questions | 10-12 correct answers to the test questions | 13-15 correct answers to the test questions |
| Report | <9 points | 9-11 points | 12-13 points | 14-15 points |
| | Task requirements not met | The presentation does not correspond to the content of the report, the report is not properly prepared, does not meet the requirements | The presentation corresponds to the content of the report, but the report is not properly prepared | The presentation corresponds to the content of the report, but the report is properly prepared |
| written test, Topic 6-11 | <10 | 11-12 | 12-14 | 14-15 |
| | Fewer than 6 correct answers to a test question | 6-9 correct answers to the test questions | 10-12 correct answers to the test questions | 13-15 correct answers to the test questions |
| | <13 | 14 | 15-19 | 20-25 |

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| research proposal, Topic 11 | Task requirements not met | The form is filled out, but the content does not meet the requirements of the topic | The form is filled out, but the research proposal is superficial, the components are not agreed | Filled out form, research proposal of an innovative nature, agreed components in detail |
|-----------------------------|---------------------------|---|---|---|

5.3 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. | <i>Oral survey after studying the topic</i> | At the next practical session after the presentation of the material on the topic |
| 2. | <i>Verbal feedback from the teacher and students after the presentation of the essay</i> | Immediately after the end of the presentation |
| 3. | <i>Verbal feedback from the teacher while working on individual tasks during classes</i> | At the next class after the student has completed the assignment |

6. EDUCATIONAL RESOURCES (LITERATURE)

Main sources

Textbooks and manuals

1. Industrial technologies of meat, milk and fish processing: textbook/ edited by F.V. Pertsevoy, O.G. Tereshkin and P.V. Gurskyi. Kyiv: Firm INKOS, 2014. 340 p.
2. Mysnyk N.A. Food preparation technology [text]/: Education. Manual - K.: "Condor". 2006. – 504 p
3. Dorokhina M.O. Technology of food products in tables and diagrams[text]/: Study guide Dorokhin M.O., Kaplina T.V. – K.: Condor, 2008. – 208 p.
4. Dietetics in terms, schemes, tables, tests [Text]: education. manual / M. P. Grebnyak [etc.] ; rec.: M. V. Pogorelov, V. V. Babienko. - Dnipro: Accent PP, 2018. – 248 p.
5. Orlova N.Ya. Physiology and biochemistry of nutrition [Text] : Textbook / N.Ya. Orlova. - Kyiv: b. v., 2021. - 248 p.

Additional sources

6. Consumption of fish and fish products in Ukraine. URL: <http://edclub.com.ua/tegy/rybatoryboproducty> (access date: 11/29/2019).
7. Ukraine continues to increase imports of fish products. URL: <http://agroyug.com.ua/archives/20030> (access date: 11/27/2019).
8. Golembovska N., Lebska T. Development of the fish products market in Ukraine. Analytical review. Industry problems, events, measures. 2014. No. 4. P. 4-8.
9. Samofatova V.A., Pankiv Yu.P. The main trends in the production and consumption of fish and fish products in Ukraine. Economics of the food industry. 2016. Volume 8. Issue 2. P. 29-32.
10. Samofatova V.A., Faluta G.I. Analysis of prospects for the development of the fish processing industry of Ukraine. Economics of the food industry. 2014. No. 3. P. 50-52.
11. Fish and fish products: results of 2018 and assessment for 2019. URL: <http://edclub.com.ua/analityka/ryba-ta-ryboproducty-rezultaty-2018-roku-ta-ocinky-na-2019-rik> (date of application: 27.12.2019).

12. Domaretsky V.A., Shiyan P.L., Kalakura M.M., Romanenko L.F., Khomichak L.M., Vasylenko O.O., Melnyk I.V. Melnyk L.M., General technologies of food production: textbook. - K.: University "Ukraine", 2010. - 814 p.
13. Domaretsky V.A., Ostapchuk M.V. Ukrainian A.I. Technology of food products: Tutorial. / Under the editorship A.I. Ukrainian. - K.: NUHT, 2003. - 572 p.
14. Kraynyuk L.M. Methodical recommendations for developing recipes for new culinary products [text]/ L.M. Krayniuk, L.O. Kasilova, L.D. Manyelova and others; KhDUHT - Kharkiv, 2005. - 42 p.
15. DSTU 3862-99 "Public catering. Terms and definitions" [text]. - Kyiv: State Standard of Ukraine, 2000. - 17 p.

Software

1. MS Excel

Modul syllabus review _____

Developed by the teacher of the Management Department Mykhalko O.G.

| The parameter by which the work program (syllabus) of the educational component is evaluated | Yes | No | Comment |
|--|------------|-----------|----------------|
| Learning outcomes for the educational component (MLOs) correspond to the EK | | | |
| The results of the study by the educational component (MLOs) correspond to the prescribed PLOs (for mandatory EKs) | | | |
| Learning outcomes by educational component provide an opportunity to measure and evaluate the level of their achievement | | | |

EK project team member _____
 (name) (surname) (signature)

| The parameter by which the work program (syllabus) of the educational component is evaluated | Yes | No | Comment |
|---|------------|-----------|----------------|
| General information about the educational component is sufficient | | | |
| The results of the educational component correspond to the EC | | | |
| The results of the study in the educational component correspond to the prescribed national educational requirements (for mandatory ECs) | | | |
| Learning outcomes by educational component provide an opportunity to measure and evaluate the level of their achievement | | | |
| Learning outcomes relate to students' competencies, not the content of the discipline (contain knowledge, abilities, skills, and not the topics of the discipline's curriculum) | | | |
| Educational activity (teaching and learning methods) enables students to achieve the expected learning outcomes | | | |
| The educational component involves learning through research | | | |
| The assessment strategy within the educational component is in accordance with University/faculty policy | | | |
| The provided assessment methods make it possible to assess the degree of achievement of learning outcomes by educational component | | | |
| The workload of students is adequate to the volume of the educational component | | | |
| Recommended learning resources are sufficient to achieve learning outcomes | | | |
| The literature is relevant | | | |

Reviewer (lecturer of the department) _____
 (name) (surname) (signature)