

НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ ВОДНОГО ГОСПОДАРСТВА ТА ПРИРОДОКОРИСТУВАННЯ

Навчально-науковий інститут агроекології та землеустрою



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National University of Water
and Environmental
Engineering

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СИЛАБУС	Іхтіофауна водойм комплексного призначення	
SYLLABUS	Ichthyofauna of reservoirs of complex purpose	
Шифр за ОП Code in Degree Programme	ОК.11	
Освітній рівень Level of Education	Магістерський (другий) Master's (second)	
Галузь знань Field of Knowledge	20	Аграрні науки та продовольство Agricultural Sciences and Food
Спеціальність Field of Study	207	Водні біоресурси та аквакультура Aquatic Bioresources and Aquaculture
Освітня програма Degree Programme	Охорона, відтворення та раціональне використання гідробіоресурсів Protection, reproduction and rational use of hydrobioresources	

RIVNE – 2024

The syllabus of the educational component "Ichthyofauna of reservoirs of complex purpose " for master's degree students of the educational program "Protection, reproduction and rational use of hydrobioresources", specialty 207 Aquatic bioresources and aquaculture. Rivne. NUWEE. 2024. 8 p.

Educational Program (EP) on the university website:
<http://ep3.nuwm.edu.ua/id/eprint/28749>

Syllabus developer:

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Syllabus was approved at the meeting of the Department of Water Bioresources Protocol No. 8 dated "24"june 2024

Head of the department: *Tatyana Poltavchenko, Ph.D., Associate Professor, Head of the Department of Water Bioresources.*

The head (guarantor) of the EP: *Vasyl Sondak, Doctor of Biology Science, Professor of the Department of Water Bioresources*


Approved by the scientific and methodical quality council of NNIAZ

Protocol No. 11 dated “_13_”_may_2024
 Head of the Scientific and Methodological Council for the Quality of the
 Institute of Agroecology and Land Management (NNIAZ):
*Alla Pryshchepa, Doctor of Agricultural Sciences, Professor, Director the
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The previous version of the syllabus (*specify code*) -

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Ichthyofauna of reservoirs of complex purpose	
ЗАГАЛЬНА ІНФОРМАЦІЯ	
Degree of higher education	<i>Master</i>
Educational program	<i>Protection, reproduction and rational use of hydrobioresources</i>
Specialty	<i>207 Aquatic Bioresources and Aquaculture</i>
Study year, semester	<i>Master's degree 1...2 year of study, 1...3 semester</i>
Number of credits	<i>3 ECTS credits</i>
Lectures:	<i>16 hours</i>
Practical /Laboratory classes:	<i>14 hours</i>
Independent work:	<i>60 hours</i>
Coursework:	<i>-</i>
Form of education	<i>full-time/part-time</i>
Form of final control	<i>examination</i>
Language of teaching	<i>the state language or a foreign language in accordance with clause 2.4 of the Regulation on the organization of the educational process at NUWEE</i>

INFORMATION ABOUT THE DEVELOPER(S)	
	<p><i>Petruk Alina Mykolaivna, Candidate of Agricultural Sciences, Associate Professor of the Department of Water Bioresources.</i></p>
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INFORMATION ABOUT THE EDUCATIONAL COMPONENT

Purpose and tasks

The task of the educational discipline "Ichthyofauna of multipurpose reservoirs" is to obtain modern knowledge of the basics of conducting technological processes related to the fishery use of multipurpose reservoirs based on creative, ecologically safe, energy- and resource-saving approaches; -mastering the basic biotechnological standards for artificial reproduction and cultivation of planting material of valuable industrial hydrobionts.

A link to the placement of the educational component on the Moodle educational platform, on the platform of educational programs and their educational components

<https://exam.nuwm.edu.ua/course/view.php?id=853>

Study prerequisites*

(the place of the educational component in the structural and logical scheme)

The educational component " Ichthyofauna of multipurpose reservoirs " has a logical and complete structure and can be studied in any semester specified in this syllabus

Competencies

- ✓ Ability to search, process and analyze information from various sources.
- ✓ Ability to abstract thinking, analysis and synthesis.
- ✓ The ability to preserve the sustainable development of aquatic ecosystems, the development and implementation of measures to increase fish productivity, as well as the biodiversity of ichthyocenoses of the river-lake network.
- ✓ The ability to determine the natural feed base, the quality of sexual products of fish, to make forecasts of fish productivity.

Program learning outcomes (PLO). Learning outcomes (LO)*

PLO1. Have specialized conceptual knowledge that includes modern scientific achievements in the field of aquatic bioresources and aquaculture and is the basis for original thinking and conducting research.

PLO3. Search for the necessary information using a variety of resources: journals, databases, open data and other resources, analyze and evaluate this information.

PLO4. Make effective decisions, take responsibility and work in critical conditions during the performance of production, technological and scientific tasks of aquatic bioresources and aquaculture, analyze and integrate alternatives, assess risks and likely consequences.

PLO6. Apply modern modeling methods, digital technologies to solve production, technological and scientific problems in the field of bioresources and aquaculture.

The structure and content of the educational component

Lectures - 16 hours. Practical 14 - hours. Independent work – 60 hours.

Lectures, presentations, discussions, situational problems. Multimedia equipment, computer equipment for processing practical work, search and analysis of information on the Internet.

LECTURES AND PRACTICAL LESSONS

Topic 1. Basics of complex use of internal natural reservoirs

Lectures – 2 hours. Practice – 2 hours Independent work - 9 hours PLO4, PLO5, PLO6 Literature [1-4]	General characteristics of rivers, lakes, estuaries and reservoirs of Ukraine as water bodies of complex purpose. Bioproduction characteristics of different types of rivers, lakes, estuaries and reservoirs. Factors and processes affecting the fishery value of reservoirs. Natural fish productivity of reservoirs and factors that determine it. Basics of fisheries classification of lakes and reservoirs.
Topic 2. Technological requirements for users of freshwater reservoirs of various types during fishing activities.	
Lectures – 2 hours. Practice – 2 hours Independent work - 9 hours PLO4, PLO5, PLO6 Literature [1-4]	Technological requirements imposed on users of inland natural reservoirs of complex purpose during fishing activities
Topic 3. Biological characteristics and abundance of fish in multipurpose reservoirs.	
Lectures – 2 hours. Practice – 2 hours Independent work - 9 hours PLO4, PLO5, PLO6 Literature [1-4]	The number of fish. Age composition and growth of fish. Linear and weight sizes of fish. Formation of ichthyofauna and fish productivity of multipurpose reservoirs
Topic 4. Introduction and acclimatization of hydrobionts in inland water bodies	
Lectures – 2 hours. Practice – 2 hours Independent work - 9 hours PLO4, PLO5, PLO6 Literature [1-4]	The concept of acclimatization and introduction. Categories of the process of acclimatization and introduction, technology of implementation of the process of acclimatization. Acclimatization of hydrobionts in rivers, lakes and reservoirs.
Topic 5. Formation of industrial ichthyofauna of multipurpose reservoirs	
Lectures – 2 hours. Practice – 2 hours Independent work - 9 hours PLO4, PLO5, PLO6 Literature [1-4]	The formation of industrial ichthyofauna of multi-purpose reservoirs as one of the main fish breeding activities of the previous fishery use of natural reservoirs. Criteria for selecting aquaculture and fishing facilities for different types of reservoirs.
Topic 6. Internal reservoirs of the Dnipro river basin and their fish population	
Lectures – 2 hours. Practice – 1 hours Independent work - 5 hours PLO4, PLO5, PLO6 Literature [1-4]	Characteristics of internal water bodies of the Dnipro river basin and the formation of their fish population.
Topic 7. Basics of integrated use of rivers, lakes and reservoirs	
Lectures – 2 hours. Practice – 1 hours Independent work - 5 hours PLO4, PLO5, PLO6 Literature [1-4]	Basics of integrated use of rivers. Basics of integrated use of lakes. Basics of complex use of reservoirs.

Topic 8. Protection and rational use of biological resources of ichthyofauna reservoirs of complex purpose	
Lectures – 2 hours. Practice – 2 hours Independent work - 5 hours PLO4, PLO5, PLO6 Literature [1-4]	Protection and rational use of ichthyofauna. Formation of ichthyofauna and fish productivity of multipurpose reservoirs by the main valuable species of fish
Tools, equipment, software	
technical teaching aids: multimedia equipment, laptop; - software: MS Windows, Internet access; -software: distance learning system Moodle	
The procedure for evaluating program learning outcomes/learning outcomes	
<p>To achieve the goals and objectives of the course, applicants need to learn theoretical material and pass modular knowledge tests, as well as timely complete and defend practical work. As a result, the following mandatory points can be obtained: - 60 points - for the timely completion and defense of practical work and other ongoing tasks (independent work), which is the current component of the assessment; – 40 points – modular controls (20+20). Total 100 points. The current evaluation and control measures within the course are carried out in accordance with the normative documents of the NUWEE: Provisions on semester current and final control of educational achievements of students of higher education (new edition) http://ep3.nuwm.edu.ua/15311/;</p> <p>Regulations on certification of higher education applicants and the work of the examination commission http://ep3.nuwm.edu.ua/8545/</p> <p>Procedure for liquidation of academic debts at NUWEE http://ep3.nuwm.edu.ua/4273/</p> <p>Regulations on the educational and scientific center of independent evaluation of the National University of Water Management and Nature Resources Use http://ep3.nuwm.edu.ua/4184/</p>	
Recommended literature	
<ol style="list-style-type: none"> 1. Modern aquaculture: from theory to practice. Practical guide / Yu.E. Sharylo, N.M. Vdovenko, M.O. Fedorenko, etc. / Author - K.: "Prostobuk", 2016. - 119 p. 2. Grynzhhevsky M.V. Intensification of production of aquaculture products in inland water bodies of Ukraine / M.V. Grynzhhevsky. - K.: The world. – 2000.- 187 p. 3. Hryb Y. IN. The concept of risks in the survival of young fish in ichthyoecosystems / Y. IN. Hryb, V. IN. Sondak, A. M. Petruk // Modern problems of the rational use of aquatic bioresources: I International Scientific and Practical Conference, (Kyiv, May 15-17, 2018) : Coll. materials - Kyiv: PRO FORMAT, 2018. - P. 15-17. 4. Ichthyofauna species diversity in multipurpose water bodies of the forest-steppe zone of Ukraine by river basins / M. Khalturin, A. Klymovets'kyi, P. Shevchenko https://doi.org/10.15407/fsu2022.02.003 	
Information resources on the Internet	
Website of the journal "Fisheries Science of Ukraine". [Electronic resource]. – Access mode http://fsu.ua/index.php/uk/arkhiv-zhurnalu	
TEACHING AND LEARNING POLICIES	
List of social, "soft" skills (soft skills)	

The components of the educational discipline contribute to the formation of universal, useful for any type of activity (interprofessional) skills that allow you to quickly adapt to new conditions, change the field of employment, solve non-standard tasks: - curiosity, initiative - during the assimilation of theoretical material from lectures and independent work to expand knowledge on relevant course topics; - purposefulness, perseverance - during the performance of practical work, as well as individual tasks for obtaining additional points; - adaptability, teamwork - during the discussion of the thematic issues of the course, working out practical cases; - social awareness and responsibility - as a result of taking into account the organizational requirements of the course, maintaining feedback and timely reporting on the types of activities performed; - critical thinking, leadership, creativity - understanding, analysis, search for solutions to current problems in the discipline and highlighting the results during training sessions, participation in conferences and round tables and/or scientific publications; - self-study for professional and personal growth - as a result of independent work, including with electronic educational resources and information bases

Deadlines and rescheduling

The deadlines for passing the intermediate control modules and the final control (credit) are established in accordance with the Regulations on the Semester Current and Final Control of Educational Achievements of Higher Education Applicants (new edition) <http://ep3.nuwm.edu.ua/15311/> Resubmission of test tasks to check the assimilation of theoretical material is carried out in accordance with the rules of the NNCNO and the Procedure for Liquidating Academic Debts at NUWEE <http://ep3.nuwm.edu.ua/4273/>

.In the case of a higher education applicant's disagreement with the evaluation results, in accordance with the Procedure for Appeals of Higher Education Applicants and Other Persons Studying at NUWHP <http://ep3.nuwm.edu.ua/15467/>

the applicant files an appeal, after which an appeal commission is convened. The organization of all types of educational activities within the course is carried out in accordance with the Regulations on the Organization of the Educational Process at the National University of Water Management and Nature Management <http://ep3.nuwm.edu.ua/4088/>

If the student disagrees with the assessment results, on the day of passing the assessment, an appeal is submitted to the NNIAZ dean's office, where the essence of the issue is explained with arguments. Attached to the complaint is a printed version of all the answers of this student during the attempt. The director of the NNI convenes an appeal commission to consider a complaint to which a student and a representative of the NNCNO are invited, in accordance with the Procedure for appeals by applicants for higher education and other persons studying at the National University of water management and nature Resources Use http://ep3.nuwm.edu.ua/15467

Non-formal and informal education (if needed)

The applicant has the possibility of recognition (re-enrollment) of the learning results obtained in non-formal and informal education in accordance with the Regulation on non-formal and informal education at the National University of Higher Education <http://nuwm.edu.ua/strukturnipidrozdili/centrneformaljnoji-osviti/dokumenti>.

The corresponding number of hours can be credited to the applicant as a result of his successful completion of an open online course on the topic of the discipline. For this, the applicant needs to present a confirming document (certificate) about the successful completion of the online course.

Rules of academic integrity

Principles of academic integrity on the website of the NUVHP "Education Quality Department": <https://nuwm.edu.ua/sp/akademichna-dobrochesnistj>, in particular, the Code of Student Honor: <http://ep3.nuwm.edu.ua/4917/>

It is forbidden to write down and discuss issues with fellow students during all control measures, modular and final controls. In the case of detection of such violations, the student is deprived of the right to further perform the tasks and this leads to a decrease in the overall grade or failure to enroll the entire course and re-study of the educational component. Information on academic integrity, plagiarism, student honor code, etc. is provided on the website of the National Agency for Quality Assurance of Higher Education <https://naqa.gov.ua/>; NUWEE on the "Quality of Education" page:

- <http://nuwm.edu.ua/sp/akademichna-dobrochesnistj>.

Attendance requirements

Lectures and practical classes are held according to the schedule in offline or online mode. Consultations are held online using Google Meet according to the consultation schedule, which is available on the website of the department of Water Bioresources. If necessary - at a time agreed with the students. Attendance is a mandatory component of the assessment. For objective reasons (illness, international internship, etc.), training can take place online (mixed form of training) upon agreement with the teacher. Applicants may use mobile phones and laptops in class, but only for educational purposes.

Author

Alina Petruk

Автор
Доцент

Аліна ПЕТРУК

Затверджено

Проректор з науково-педагогічної та
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