

### Annotation of the selective educational component

<b>Academic discipline</b>	<b>Fish physiology</b>
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<b>The course and semester, when the discipline is planning to study</b>	2 <sup>nd</sup> course, 1 <sup>st</sup> semester
<b>Faculties whose students are invited to study discipline</b>	Faculty of Ecology
<b>List of competencies and learning-related outcomes that discipline provides</b>	<p>The result of training in the discipline is the acquisition by students of such knowledge and skills:</p> <p>Know the features of metabolic processes in the body of fish.</p> <p>Know and understanding the basics of fish farming in fish physiology in an appropriate is equal to the main types of professional activity.</p> <p>Know the structure, and lifestyle of fish and fish-like.</p> <p>Understand the origin of aquatic biological resources, their systematics, and biological peculiarities.</p> <p>Know the phenomena occurring in aquatic bioresources and aquaculture</p> <p>Know modern aquatic bioresources and aquaculture (fish physiology).</p> <p>Understand the levels of development of aquatic bioresources and aquaculture in modern times.</p> <p>Have knowledge of fish physiology. Use the acquired skills in these directions.</p> <p>Interpret the general patterns underlying the physiological living organism processes</p> <p>Make a conclusion about the state of the physiological functions of the body, its systems and organs</p> <p>Plan, organize, and conduct a physiological experiment, and analyze its results</p> <p>Understand and solve complex specialized problems and practical problems in the production and cultivation of aquatic biological resources and aquaculture.</p>
<b>Description of the discipline</b>	
<b>Preconditions necessary for the study of the discipline</b>	The selective academic discipline "Physiology of fish" is based on knowledge of such a discipline as "Zoology", "Morphology of fish", "Biological basis of fisheries"
<b>The maximum number of students who can study simultaneously</b>	Lectures - 50 students Practical - 25 students

<p><b>Lesson plans</b></p>	<p><b>Lectures</b></p> <p>Content module 1. General fish physiology</p> <p>Topic 1.1. The main manifestations of life.</p> <p>Topic 1.2. Body composition of fish.</p> <p>Topic 1.3. Physiology of arousal</p> <p>Topic 1.4. Physiology of the skin</p> <p>Topic 1.5. Sensory systems in fish.</p> <p>Topic 1.6. Physiological bases of fish behavior.</p> <p>Topic 1.7. Muscular system.</p> <p>Content module 2. Metabolism and energy</p> <p>Topic 3.1. Carbohydrate metabolism</p> <p>Topic 3.2. lipid metabolism</p> <p>Topic 3.3. Protein metabolism</p> <p>Content module 3. Applied fish physiology</p> <p>Topic 4.1. Digestion of hydrobionts</p> <p>Topic 4.2. Features of breathing in the aquatic environment.</p> <p>Topic 4.3. Reproduction and development.</p> <p>Topic 4.4. stress and adaptation.</p> <p>Topic 4.5. The endocrine system of fish.</p> <p><b>Practical classes</b></p> <ol style="list-style-type: none"> <li>1. Physiology as a science. Research methods in fish physiology. Comparison of aquatic and terrestrial lifestyles. Principles of regulation of a living organism.</li> <li>2. Physiology of excitation.</li> <li>3. Conditioned reflex activity of fish.</li> <li>4. Muscle physiology.</li> <li>5. The internal environment of fish and their regulation.</li> <li>6. The circulatory system and its importance for the body.</li> <li>7. Osmoregulation functions of fish.</li> <li>8. Features of breathing in the aquatic environment, the essence of the process.</li> <li>9. Features of the structure of the digestive system of fish in connection with the nature of nutrition.</li> <li>10. Metabolism and energy.</li> <li>11. Physiology of the skin.</li> <li>12. Reproduction.</li> </ol>
<p><b>Teaching language</b></p>	<p>Ukrainian</p>