

INNOVATIVE TECHNOLOGIES IN EDUCATIONAL PROCESS

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Studying biophysics in the educational process by bachelors and specialists is rationally to combine the classical teaching methods (lectures, laboratory and practical classes) and innovative technologies, such as: information-communication, block-modular, research, case-studies, and several others.

“Problem-based learning” of students implies the analysis of real technological issues, of problem situations and the organization of active independent work of students at seminars. As a result, creative mastery of knowledge, skills and skills takes place, and mental abilities are developed. So, mycotoxins are an important problem of the present. The biophysical and biochemical mechanisms of their toxicity, the existing and currently being developed methods for their detection are examined at the problem biophysical seminars. In addition, when conducting laboratory analyzes of samples or examination of fur, the problem of the species of animal hair remains relevant. In laboratory classes, students independently compare the diagnostic capabilities of light microscopy and mathematical nonlinear dynamics methods, identify the advantages and disadvantages of each technique. The purpose of such classes is to stimulate the search and development of new methods of examination and laboratory diagnostics by the students themselves.

Case-technology involves the use of interdisciplinary knowledge to solve the problem presented. Solving problems from the general biophysics is carried out using the skills acquired in mathematics — differentiation, integration, finding vector and scalar result of vectors' multiplication. In addition, veterinary biophysics is fully based on knowledge of biology and physics, higher mathematics, biochemistry and physiology of animals. Thus, the current problem of iodine deficiency in animals has an ambiguous interpretation. To find the best ways to solve the problem, one needs knowledge of iodine metabolism and its digestibility from organic and inorganic compounds, and methods for determining the amount of iodine in food products. It is possible to begin the study of the biophysical side of the problem only with a good knowledge of the physiology, biochemistry and physical bases for determining such a volatile and active compound as iodine. Another example. The study of the mechanisms of interaction of laser and X-ray radiation with a biological cell and tissues makes it necessary to reanimate the knowledge gained by students in classes on anatomy, morphology and cytology.

Thus the simultaneous use and proper combination of several technologies within the framework of one discipline teaching, increase an interest to the base-cycle disciplines, and will ensure an increase in the motivation of training and the quality of graduate training.