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| Educational program | 6В01504 Physics-Informatics |
| EP purpose | Providing high-quality professional training of future teachers of physics and Informatics through the formation of socio-cultural, linguistic (communicative), natural-mathematical, information and communication, professional competencies in the field of fundamental foundations of the specialty and learning technologies. |
| EP type | New |
| Level on NQF | 6 |
| Level on SQF | 6 |
| The awarded academic degree | Bachelor |
| Period of study | 4 |
| Volume of the credits | 240 |
| Language of education | Kazakh, Russian, English |
| Date of approval of the OP at the Board meeting | 10.04.2024 |
| Professional standard | Pedagog 15.12.2022 |

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| № | Learning outcomes: |

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| 1 | apply new approaches in teaching and educating students (personality-oriented, competence-based, dialogical, collaborative), methods of differentiation, systems of criterion assessment, digital technologies, master the methodology of organizing the educational process using remote educational technologies |
| 2 | to take an active civil position in interpersonal and intercultural communication in a multilingual environment on the basis of fundamental knowledge and skills in the field of social, political, cultural, psychological sciences in the context of their role in the modernization and digitalization of Kazakhstan's society |
| 3 | evaluate and apply innovative approaches to understanding public socially significant phenomena and processes in the legal, entrepreneurial, industrial, and environmental environment |
| 4 | apply the skills of free communication in different linguistic and cultural environments, knowledge of the theoretical and experimental foundations of physics, computer technologies, technologies for teaching physics and computer science in a foreign language, methods of scientific research and academic writing, understand the importance of academic ethics and the principles of academic integrity |
| 5 | explain the fundamental principles of software development, including the description of programming paradigms, data structures, algorithms and estimates of their complexity; apply the capabilities of the mathematical package of analytical calculations for theoretical calculations and processing of experimental results to solve general physical and applied physical problems |
| 6 | to explain physical phenomena using basic theoretical knowledge on fundamental sections of general and theoretical physics, astronomy for solving professional problems, to evaluate knowledge on physical laws and their application in technology; to evaluate the results of observations and experiments; to apply methods of scientific knowledge in specific cases; the consequences of human household and industrial activities related to physical processes from the standpoint of environmental safety |
| 7 | demonstrate logical and critical thinking, creative abilities to select suitable mathematical methods for solving practical problems, evaluate the results obtained, create mathematical models of typical professional problems and interpret the results obtained taking into account the limits of applicability of models, use basic knowledge of fundamental sections of mathematics, theoretical foundations of computer science in professional activities |
| 8 | synthesize the collected and processed data, information for presentation in the form of a report, presentation, scientific model and evidence for hypotheses, arguments and explanations |
| 9 | apply modern methods of managing the project activities of students in an educational environment, master the methods of conducting scientific research in the field of physics and computer science, teaching methods, using modern information and pedagogical learning technologies; analyze the principles of operation and characteristics of devices and devices, the scope of scientific discoveries, the scope of nanotechnology, as well as parameters that characterize the state of the Universe and possible ways of its development |
| 10 | to predict, plan and manage the educational process in terms of the updated content of secondary education, taking into account the physiological and functional characteristics of the development processes, individual educational needs of pupils and students |
| 11 | formulate and solve standard and Olympiad problems, organize and set a physical experiment (laboratory, demonstration, computer); analyze the results of measurements, detect the relationship between the values, use the results for their interpretation and makes conclusions and conclusions |