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Registration data

Application type	Updating of EP in the Registry	Status	Approved
Date of getting the status	12.09.2025 17:25	Sent to rework by the expert (count)	0
Sender	6772	Registration number	6B01500183

[Educational program passp](#)

Higher and Postgraduate Educational Programs

☐ Project EP ☐ Participant of project EP

Field of education *

6B01 Pedagogical sciences

☐ Interdisciplinary EP

Direction of personnel training *

6B015 Training of teachers in Natural science subjects

Group of educational programs *

B011 Teacher training in informatics

Educational program *

6B01505 Informatics

Curriculum *

Информатика (бакалавриат)

Kazakh language

Russian language

English language

EP purpose *

Training of qualified teachers with sufficient knowledge and competence level, carrying out educational, innovati and analytical activities in the field of Informatics.

EP type *

Acting EP

Level on NQF *

6

Level on SQF *

6

EP distinctive features

No

Degree to be conferred *

Bachelor

Period of study *

4 ▾

Volume of the credits *

240

Language of education *



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English

Professional Standard for EP *

Exists

+ Add

№	Name of professional standard
1	Professional standards for teachers of educational organizations

Professional standards (career standards)

Professional standard has been used at
developing EP ☐

Date of approval EP on the Academic Council *

14-04-2025



☒Existence of the annex to the license for the direction of personnel training

The license number on the direction of training *

KZ49LAM00007465

☐The training format is online

☒EP accreditation existence

Atlas of new professions *

қарастырылмаған

Regional standard *

қарастырылмаған

The formed educational outcomes

№	Educational outcome
1	In KazakhIn RussianIn English Деректерді тиімді сақтау үшін реляциялық және реляциялық емес дерекқорларды қолдана отырып, мобильді қосымшалар мен функционалды веб-сайттар жасаңыз.
2	In KazakhIn RussianIn English Физика-математикалық әдістерді қолдана отырып, байқалған фактілер мен құбылыстарды талдау, қазіргі физиканың негізгі математикалық объектілері мен ұғымдарын білу және түсіну.
3	In KazakhIn RussianIn English Құқықтық, экономикалық, кәсіпкерлік, өндірістік, экологиялық ортада, сондай-ақ қаржылық сауаттылық, инклюзия құндылықтары, тұрақты даму және сыбайлас жемқорлыққа қарсы
4	In KazakhIn RussianIn English Шығармашылық, ғылым, креатив құру және инновациялық шешімдерді енгізу үшін білім беру ортасын құру үшін ойлаудың алгоритмдік және шығармашылық бейнелерін қолдану, күшті



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5	In KazakhIn RussianIn English		
	Компьютерлік модельдер мен графикалық нысандарды құра отырып, роботтар мен робототехникалық жүйелердің макеттерін жобалау және дамыту.		
6	In KazakhIn RussianIn English		
	Даму процестерінің физиологиялық және функционалдық ерекшеліктерін, тәрбиеленушілер мен білім алушылардың жеке білім алу қажеттіліктерін ескере отырып оқу-тәрбие процесін		
7	In KazakhIn RussianIn English		
	Информатика мұғалімінің оқу-практикалық іс-әрекетіндегі мәселелерді зерттеу және шешу үшін алған білімдерін талдау және бағалау, оқу барысында білім, білік және дағдылардың		
8	In KazakhIn RussianIn English		
	Жобалау және зерттеу қызметінің нәтижелерін ғылыми жұмыстар түрінде, оның ішінде ағылшын тілінде жүргізу және ұсыну.		
9	In KazakhIn RussianIn English		
	Оқытудың цифрлық технологиялары мен ақпараттық қауіпсіздік технологияларын енгізе отырып, шығармашылық білім беру ортасын құру үшін пәнаралық және жобалық оқыту әдістерін қолдану.		
10	In KazakhIn RussianIn English		
	Алгоритмдер, мәліметтер құрылымы, объектіге бағытталған бағдарламалау, тиімді бағдарламаларды жазу әдістері, құралдары мен әдістері туралы білімдерін көрсете отырып,		

Data on disciplines

Nº	Name of discipline	Short description of discipline	Cycle	Component	Credits			
						ON1	CR	ON2
1	Methods of scientific research	The goal is to form knowledge about the principles, technologies, practical methods and techniques of conducting scientific research based on modern achievements of scientists. Forms the basic foundations of scientific culture and ethics, flexible perception of scientific texts, skills of effective application of acquired knowledge in planning and organizing research work, the ability to analyze and summarize research results.	GED	EC	5	☐		☐



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2	Ilyastanu	The purpose of the discipline is to develop a deep-thinking personality with high aesthetic taste, appreciating literature, art, traditions, culture and language of the Kazakh people through a deep and comprehensive study of the works of Ilyas Zhansugurov. Forms an understanding of the importance of the works of Ilyas Zhansugurov in the development of the Kazakh literary language; skills of intellectual and creative thinking, the ability to cherish the values of national and spiritual heritage.	GED	EC	5	☐	☐
3	Fundamentals of financial literacy	The purpose is to familiarize students with the economic problems of modern society, the formation of economic thinking and gaining knowledge in the field of theoretical foundations and practical skills in the field of entrepreneurship. It is focused on the formation of students' comprehensive understanding of the laws of the functioning of the economy, obtaining business education aimed at acquiring applied competencies in various fields of entrepreneurial activity, reveals the features of creating and successfully running their own business.	GED	EC	5	☐	☐
4	Basics of law and anti-corruption culture	The objective is to familiarize students with the fundamental branches and institutions of law, the foundations of anti-corruption culture, as well as the patterns of emergence, development, and functioning of the state and law. The course cultivates anti-corruption awareness and a high level of theoretical knowledge concerning the primary functions of law within the state and society, its impact on the development of the rule of law and civil society, and the value of inclusion as an integral component of a just and equitable legal order. Particular emphasis is placed on fostering students' understanding of the importance of human rights for all individuals, regardless of their social, cultural, physical, or other characteristics.	GED	EC	5	☐	☐

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5	Ecology and life safety basics	Purpose – the goal is to develop knowledge of the fundamentals of ecology, sustainable development, and life safety, enabling the analysis of ecological processes, the assessment of the socio-environmental consequences of anthropogenic activities, the assurance of environmental safety, and the application of methods and technologies for protection in emergency situations. Develops the ability to assess the impact of environmental factors on human health; to forecast ecological processes for planning and implementing measures aimed at enhancing life safety and ensuring environmental security; and to make informed decisions in adverse environmental and emergency situations, taking into account the potential consequences of accidents, disasters, and natural hazards within the framework of sustainable development principles.	GED	EC	5	☐	☐
6	Economics and entrepreneurship	Objective – to familiarize students with the economic challenges of modern society, develop economic thinking, and provide knowledge of the theoretical foundations and practical skills in the field of entrepreneurship. The program is aimed at forming a comprehensive understanding of the functioning of the economy, while delivering business education focused on acquiring applied competencies in various areas of entrepreneurial activity. Special attention is given to issues of sustainable development, efficient resource use, and the implementation of lean production principles as key elements of effective and environmentally responsible business practices. The course also explores the specifics of creating and successfully managing a business, taking into account modern requirements for environmental and social responsibility in entrepreneurship.	GED	EC	5	☐	☐
7	Academic writing (in English)	The discipline is aimed at developing the skills of extracting the necessary information from the original text in any of the three languages, skills of annotation and abstracting; reasoned presentation of one's own point of view (orally and in writing) in interpersonal and professional communication in professional activities and social situations.	BD	UC	5	☐	☐

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8	Methods of teaching the subject «Digital literacy» in primary grades	During the study, students will learn about the subject and methodology of pedagogical activity, the methodology and technology of teaching the subject of digital literacy in primary school; the goals and content of education, principles, methods, means, forms of organization and control of results, their interaction when teaching the subject of digital literacy for elementary grades.	BD	UC	5	☐		☐
9	Methods of teaching Informatics in high school	This course is a continuing course and contains the main teaching methods for the professional training of computer science teachers in high school; the relationship of computer science teaching methods with other sciences; the main regulatory documentation for the organization, planning and provision of the educational process in computer science.	BD	UC	5	☐		☐
10	Inclusive education	Examines the theoretical foundations of the organization of inclusive education, historical aspects of the development of inclusion, inclusive education model. Studies technologies of inclusive education, drawing up an individual educational route, planning of educational process taking into account special educational needs of children, the organization of tutor practice in the conditions of inclusive education.	BD	UC	5	☐		☐
11	Theoretical foundations of Computer Science	The discipline is aimed at acquiring knowledge of the concept of information as a universal semantic property of matter; the basic theories of information, the theory of digital machines, the theory of algorithms, etc.; methods of analysis of algorithms, ways to assess their complexity and efficiency; devices and features of the functioning of digital machines to control information processes.	BD	UC	5	☐		☐
12	Mathematical calculations and analysis (Algebra and geometry, Mathematical analysis)	The course involves the study of the basics of algebra and geometry, includes the theory of matrices, systems of linear equations, vector theory, analytical geometry, limit and differentiation of functions of one variable. It also introduces students to mathematical methods and tools for solving various applied problems using analysis, which is based on the theory of differential and integral calculations.	BD	UC	6	☐		☒



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13	Methods of teaching of Informatics in secondary basic school	The discipline is aimed at the methodology for preparing a future computer science teacher in a primary secondary school, who should be ready to teach and educate students taking into account the specifics of the taught subject; promote socialization, the formation of a common culture of personality, conscious choice and subsequent development of professional educational programs; use a variety of techniques, methods and means of teaching	BD	UC	5	☐		☐
14	Basics of object-oriented programming	In the course Fundamentals of object-oriented programming students have the opportunity to learn the basics of OOP, get acquainted with the basic concepts and basics of the implementation of OOP in Java, prepare for further passage of more complex programming courses.	BD	UC	5	☐		☐
15	Physiology of school children development	Examines the General patterns of age-related features of growth and development of children and adolescents, the formation of their physiological functions. Studies the interaction of the child with the environment, hygiene standards and requirements aimed at the protection and promotion of health, harmonious development and improvement of the functionality of the body of children and adolescents.	BD	UC	5	☐		☐
16	Pedagogy	Considers the latest methods and technologies of teaching in the framework of the updated content of secondary education. Studies methods of scientific analysis, forecasting, planning and management of the pedagogical process. It forms theoretical ideas about pedagogy as a branch of humanitarian knowledge and interaction of subjects of the educational process.	BD	UC	5	☐		☐
17	Theory and methods of educational work	Examines the methods of organization of educational work and describes the laws, the essence and content of the processes of education, studying the features and principles of education within the updated content of secondary education. It is aimed at forming the interest of the future teacher for further pedagogical self-education and professional self-improvement	BD	UC	5	☐		☐



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18	Information security and information protection	Students will study: the essence, goals and principles of information security in educational organizations, directions of their practical implementation; information and legal aspects of information resources security, the main problems of information law, information and legal relations, principles and methods of intellectual property protection; information security problems, the main trends and directions of formation and functioning of a comprehensive information security system in educational organizations.	BD	EC	5	☐	☐
19	Criteria-based assessment technologies	The discipline is devoted to the study and analysis of the current state of methods and means of diagnosing the achievements of students in computer science; the place and role of evaluation in the educational process in computer science; technology models of criteria-based assessment, its principles, stages and tools of evaluation.	BD	EC	5	☐	☐
20	STEAM technology in education	Reveals ways to create sustainable links between school, society, work and the whole world, contributing to the development of social literacy and competitiveness. Reveals an interdisciplinary and project-based approach to learning, which will allow students to strengthen the practical orientation of research and scientific-technological, as well as creative potential.	BD	EC	5	☐	☐
21	Organization of computer science training on the basis of level programs	The course is aimed at the study and application of individual techniques and technologies developed and used in teaching computer science. In the study of this course, attention is paid to pedagogical technologies of teaching computer science, based on the principles of level programs, new technologies for building lessons on the updated content of education.	BD	EC	5	☐	☐
22	General physics course	This course covers the main topics of mechanics, molecular physics and thermodynamics, electricity and magnetism. Discussed ways of solving physics problems on the basis of physical laws to the phenomena of nature. The methods of numerical and experimental studies, the ability to process and analyze the results are described.	BD	EC	6	☐	☒



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23	Fundamentals of artificial intelligence	The discipline is aimed at studying the basic concepts, methods and algorithms that underlie the creation and application of artificial intelligence. As part of this course, students will learn the theoretical foundations of machine learning, neural networks, natural language processing algorithms, and computer vision. They will also get acquainted with the ethical, social and legal aspects of the application of artificial intelligence in various areas of life.	BD	EC	5	☐		☐
24	Modern educational technology	The discipline is designed to master innovative and necessary knowledge for the search and application of appropriate modern pedagogical technologies in the educational process and to create their own multimedia products through the study and application of modern technologies.	BD	EC	5	☐		☐
25	Modern physics	This course examines the role of a holistic view of the modern physical picture of the world unified methods of its study. Describes how to use theoretical knowledge in solving practical problems to explain physical phenomena.	BD	EC	6	☐		☒
26	Fundamentals of cybersecurity	The discipline is focused on the study of the principles of construction, types and functions of operating systems and security systems. The course outlines the main approaches, methods and algorithms of modern cybersecurity, as well as the basic concepts. Much attention is paid to new areas of cryptography related to ensuring the confidentiality of the interaction of computer users and computer networks.	BD	EC	5	☐		☐
27	Methodology and technology of distance education	Considered methodological issues of distance learning and e-learning methods, examines the features of the organization of the educational process using remote educational technologies, considering the achievements of science, modern educational practice and advanced pedagogical experience.	BD	EC	5	☐		☐
28	Working with application programs	The subject is aimed at developing students' competencies in the field of using application software and acquiring skills in using application software packages to solve practical problems.	BD	EC	5	☐		☐



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29	Fundamentals of applied behavior analysis	Course goal — to develop the ability, grounded in Applied Behavior Analysis (ABA), to critically analyze data-based functions of behavior; design and implement individualized interventions in inclusive educational settings; and evaluate their effectiveness, safety, and ethical soundness. Develops skills to: operationalize behavior; collect and analyze data (incl. ABC); identify behavioral functions; design and apply behavior support plans; teach functionally equivalent alternative behavior; manage crisis situations; and assess outcomes.	BD	EC	5	☐	☐
30	Computer control in Mechatronics and Robotics	In the discipline “Computer Control in Mechatronics and Robotics”, the material related to the basics of using computer control in professional engineering activities is presented. The knowledge gained in this discipline is used in the study of most special disciplines. The acquired knowledge will help to create effective programs for solving automation problems in Mechatronics and Robotics.	BD	EC	5	☐	☐
31	Design and development online courses	The course is aimed at developing the skills of designing and developing interactive online training courses using various software and tools. Students will use modern information technologies, which allows them to solve some of the difficulties in designing the life cycle of e-learning. The article considers the heterogeneity of approaches to the organization of e-learning, the assessment of the quality of e-learning, especially in the aspect of modern strategies of informatization of education.	BD	EC	5	☐	☐
32	The concept of robotic systems	The course is designed to develop skills such as: development of control systems of robots; skills of working with information in global computer networks; the ability to generalize, analyze, perceive information; development of technological training of robotic production.	BD	EC	5	☐	☐
33	Programming in C#	The main volume of the material is devoted to the distinctive (in comparison with other so-called managed languages) features of the C# language: motivation of their appearance, patterns of application and typical mistakes made when using them. Asynchronous I/o and its integration into the language through the async / await construct are considered. The features of the code generated by different syntactic sugars (foreach, using, etc.) are studied.	BD	EC	5	☐	☐



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34	Programming in C++	The course is aimed at studying programming in c++, the student builds algorithms and effectively solves real-life problems. Students of the course gain knowledge by the example of solving problems of varying complexity, from simple tasks to specific automated solutions.	BD	EC	5	☐	☐
35	Technology for creative, critical and design thinking	In the process, students will be introduced to strategic technologies for high-performance classroom and group work practices to promote effective learning; survey methods and group discussion; a constructivist cognitive model based on the 5E principles to develop creative, critical, and design thinking at a higher level; and how to create a stimulating learning environment both online and offline.	BD	EC	5	☐	☐
36	Creating and designing a Lego construction robot	The discipline is aimed at getting acquainted with the current state and prospects for the development of educational Robotics, to study the features of the main elements of the designer. Students will learn how to design, develop, and program robots of varying degrees of complexity and solve technical problems in the design process.	BD	EC	5	☐	☐
37	Programming (basic level)	Currently, object-oriented programming is developing rapidly. It allows you to quickly create applications of varying degrees of complexity — from the simplest programs to professional ones. When studying the course, the techniques of visual design of applications using the main means of the system and the technology of object-oriented programming, that is, the technology of program development, are considered. This includes configuring components, exception handling, creating forms and menus, working with graphics, etc.	PD	UC	7	☐	☐
38	Basics of programming (beginner level)	An introductory course in programming in Python, during which students will master the basic constructions, syntax of the language, data types, conditions, arrays, lists, loops, functions, and also learn how to solve problems of varying complexity and orientation independently.	PD	UC	5	☐	☐



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39	Creating Python applications	The discipline is designed for more advanced learning of the Python programming language and is aimed at studying functions, modules, classes and other features of the programming language for solving applied problems. During the course, students will learn how to write applications using an object-oriented approach in the Python programming language.	PD	UC	6	☒	High	☐
40	3D Modeling	During the course, students will learn about the methods of obtaining 3D-models, will make interesting and useful models for 3D-printing in the mode of accurate modeling and in the free mode, as well as in the mode of sculpting.	PD	EC	5	☐		☐
41	Research and project activities in educational institution	The course provides students with training in quantitative and qualitative research methods, empowering students with the skills to use research to analyze and evaluate current and future education reforms in Kazakhstan and in international contexts. In the process of developing research skills, students will conduct an independent research project on an important educational topic of their choice.	PD	EC	5	☐		☐
42	Innovations in education	The discipline is focused on the launch and growth of innovative technological solutions for educational tasks. In the process of developing research skills, students will conduct an independent research project on an important educational topic of their choice, as well as on the formation of a basic set of knowledge and practical skills necessary for the organization and planning of innovative activities of a teacher in the educational process.	PD	EC	5	☐		☐
43	Databases and expert systems	In the course you will learn how to use transactions and access rights to the data. The course also provides an overview of current trends in data science in connection with the emergence of Big Data. At the end of the course will be shown the scope MySQL databases and modern approaches to the processing of big data.	PD	EC	6	☒	High	☐

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	Database management systems	The Introduction to Database course introduces the history of structured data processing systems, information processing methods, and the development of data models and data management systems. The basis of the course is the study and application of SQL tools in typical situations for processing data in SQL-DBMS. Implementation of practical tasks within the course involves the use of MySQL database.	PD	EC	6	☒	High	☐
45	Solving non-standard tasks in computer science	This discipline is designed for detailed analysis of the structure of the Olympiad problems and analysis of previous Olympiads. Students will develop the skills of solving and developing multi-level Olympiad tasks in Informatics at the school stage of the Olympiad.	PD	EC	4	☐		☐
46	Workshop the solution of Olympiad tasks in Informatics	The discipline is aimed at the formation of students practical skills and abilities to develop algorithms for solving complex problems and related programs. Students will learn about new, non-traditional methods of teaching computer science; about testing the program, in particular, about automated testing using ACM technology.	PD	EC	4	☐		☐
47	Computer graphics	The course examines all production procedures that are associated with the prepress workflow: formation Photoshop-system, the fundamentals of competent work in Photoshop, color settings, correction of tones and color correction, digital darkroom, sharpness, spot color and duplex, bar graphics, scanning, image input, the technique of image editing, output methods, media and web.	PD	EC	5	☐		☐
48	Development of mobile applications	During the semester, students will learn how to create modern Android applications. Students will learn all the basic functionality in the current version: Activity, Layout, Fragments, REST API, Manifest. Applications will have a full set of required elements: buttons, pictures, tabs, styles, authorization.	PD	EC	6	☒	High	☐



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49	Creating a database by means of object-oriented programming	The course will study the basic concepts of the object-oriented approach and their specific refraction in the context of OOBД, discusses the basic concepts of object-oriented data modeling, programming languages and query languages of OOBД, briefly reviews the characteristic representatives of object-oriented DBMS - ORION and O2. execution and optimization of requests to OOBД, issues of synchronization of access and transaction management in OOBД, communication of OOBД and deductive and active databases.	PD	EC	5	☒	High	☐
50	Game development in Unity	The discipline is aimed at developing two and three dimensional games that work with modern operating systems, on game consoles and launch in browsers using special modules	PD	EC	5	☒	High	☐
51	Web-programming	In the study of the discipline, students will learn: methods of designing a web site as a static information system; methods of processing and editing digital images; client side software used to create web pages; server side software used to create web pages, databases, virtual server.	PD	EC	6	☒	High	☐

EO attainability coefficient: 89,83 %

	State	Status assignment date and time	General expert op
1	Expertise	12.09.2025 17:24	обновить

Basis for updating of EP *

Изменение лицензии, исключен ПС Педагог, утративший силу. Добавили новую дисциплину "Основы прикладного поведения".