MODULE HANDBOOK

EP MA 7M01502 – Physics (IP)

Content

Module title	IFN 5201 History and Philosophy of Science
Semester	1
Responsible Instructor	Sarsembin U.K.
Language of Instruction	Kazakh
Correlation with the curriculum	Required component
Forms of Instruction	Lectures, practise, Independent work
Student Workload (including contact hours and SWS)	Total workload: 90 h. Contact hours: 30 (15 h lecture, 15 h practice) Independent work: 30 SIWT, 30 SIW
ECTS	3
Required and Recommended Prerequisites for Taking the Module:	To study the course "History and Philosophy of Science," the graduate student should have prior knowledge of the history and theory of philosophy, humanities, natural sciences, and specialized subjects.
Module objectives/intended learning outcomes	To facilitate the formation of learners as future professionals and scientists. The course aims to explain the history and philosophy of science, its role in societal development, and its connection with social institutions and each other. It focuses on developing the ability to deeply analyze the key issues of contemporary philosophy of science, the state policy in science development, and the major challenges faced by society.
Content	The philosophy of science and its formation, the primary object of study. Fundamental ideas of the philosophy of science, types of science, and stages of development. The role of science in society and its function as a social institution. The relationship between science and philosophy. Key categories of the philosophy of science, scientific research, the fundamental structure and methods of scientific cognition, and the characteristics of modern science. The role of science as a social institution and a profession within society. Types and developmental directions of modern science, types and development of science in Kazakhstan, and the state policy on science development.
Form of Examination	Written
Requirements for Study and Examinations	Full comprehension of the course topics, thorough familiarity with relevant literature, understanding the relevance and uniqueness of each topic, and in-depth knowledge of the history of science, scientific cognition, and research methods.

References	Main references: 1. Kenny, A. *Ancient Philosophy*. – Almaty: National Translation Bureau, 2018. – 364 p. 2. Johnston, D. *A Brief History of Philosophy*. – Almaty: National Translation Bureau, 2018. – 224 p. 3. Kenny, A. *Medieval Philosophy*. – Almaty: National Translation Bureau, 2018. – 352 p. 4. Hess, R. *25 Key Books in Philosophy*. – Almaty: National Translation Bureau, 2018. – 368 p. 5. Ryskaliyev, T.Kh. *Overview of the History of Philosophy: Textbook*. – Oral: Dastan, 2005. – 382 p. 6. Abai. *Book of Words. Poems*. – Almaty, 1993. – 272 p. 7. *World Philosophical Heritage*. In 20 volumes. Vol. 4. *Philosophy of al-Farabi and Ibn Sina*. – Almaty: Zhazushy, 2005. – 568 p. 8. *Western Philosophy: Textbook*. – Almaty: Zhazushy, 2009. – 480 p. 9. Nysanbayev, A. *History and Philosophy of Science: Textbook*. – Almaty: Evero Publishing, 2013. 10. Dukenbayeva, Z.O., Talgatbek, M.M. *Spiritual Continuity of al-Farabi and al-Mashani: Scientific Publication*. – Almaty, 2017. 11. Abishev, K. *Philosophy: Textbook for Students and Master's Students*. – Almaty, 2000. 12. Asarov, A. *Philosophy of Science: Terminological Dictionary*. – Almaty: Medet Group, 2021. – 122 p. Additional References: 1. Al-Ani, N.M. *Philosophy of Technology*. – St. Petersburg, 2004. 2. Gorokhov, V.G. *Fundamentals of the Philosophy of Technology and Technical Sciences*. – Moscow, 2007. 3. *History of Informatics and Philosophy of Information Reality*. – Moscow, 2007. 4. Kazyutinsky, V.V. *Global Evolutionism and the Scientific Picture of the World* // *Global Evolutionism (Philosophical Analysis)*. – Moscow, 1994. 5. Karamova, O.V. *Philosophy, Methodology, and History of Economic Science*. – Moscow, 2007. 6. Kosichenko, A.G. *Scientific Creativity*. – Alma-Ata, 1992. 7. Lektorsky, V.A. *Classical and Non-Classical Epistemology*. – Moscow, 2006. 8. Mukashev, Z.A. *Concepts of Modern Natural Science*. – Almaty, 2005. Scientific Libraries in Kazakhstan: 1. Kazakhstan National Electronic Library – http://www.kazneb.kz 2. National Academic Library – http://www.nabrk.kz 3. National Library of the Republic of Kazakhstan – http://www.nlrk.kz 4. Scientific Library of “Gylym Ordasy” RSE under the Ministry of Science and Higher Education of the Republic of Kazakhstan – http://www.library.kz 5. Russian Scientific Network – an information system aimed at facilitating public access to scientific, popular science, and educational information – http://nature.web.ru

EP	7M01502 - Physics
Module title	Pedagogy of Higher Education
Semester	1 semester
Responsible Instructor	Ramazanova Dinara, PhD

Language of Instruction	Russian, Kazakh languages
Correlation with the curriculum	Required component
Forms of Instruction	CER, MOOC, etc.
Student Workload (including contact hours and SWS)	Lectures – 15 hours, practical classes – 30 hours, SIWT – 15 hours, SIW – 45 hours (lecture, lesson, project, seminar etc.) / 90 hours
ECTS	3
Required and Recommended Prerequisites for Taking the Module:	Prerequisites: In order to master the "Pedagogy" course in depth, students will build on their previously acquired professional knowledge, skills, and abilities in the fields of philosophy, general pedagogy, and general psychology at the bachelor's level.
Module objectives/intended learning outcomes	**Module objective:** To teach undergraduates the basic professional and pedagogical culture and to arm future teachers with the theoretical and methodological foundations of higher school pedagogy, to introduce them to modern technologies for planning and organizing teaching and education, and to the communication technology of teacher-student interaction in the educational process of higher education. **Learning outcomes:** A) to acquire new knowledge in the field of physics, using modern educational technologies; B) to know languages in spheres of social and scientific communication; to be capable to continue training and to conduct professional activity in the foreign-language environment; C) knowledge of the entire pedagogical process in higher education institutions, a system of professional knowledge and understanding of its structure, content, forms and methods of teaching, tools, and new pedagogical technologies of teaching; D) Has high skills and techniques in personal and professional activities, is able to use media education technologies, and has mastered the ability to manage the socialization process and emotional intelligence of the individual; E) Formation of a competent specialist who has a comprehensive and deep understanding of national values in the development of human capital, who can adhere to the continuity of classical innovative foundations in pedagogy and psychology; Ensuring the training of specialists with a high communicative culture, who have developed the skills to use innovative (ICT) technologies in the management of education and upbringing.
Content	The discipline is aimed at mastering the patterns and principles of training, means and methods of higher professional education, and examining theoretical and practical problems of higher professional education. In the course of mastering the discipline, students acquire a deep understanding of the key tasks of the higher education system of the Republic of Kazakhstan, develop skills in managing the pedagogical process using modern pedagogical technologies.
Form of Examination	written
Requirements for Study and Examinations	Students who have mastered the course material and scored at least 50% of the total rating based on the results of the 1st and 2nd midterm tests are allowed to take the final exam
References	Main References: 1. Shalgynbayeva, K.K., et al. Pedagogy of Higher Education: Textbook. / K.K. Shalgynbayeva, N.P. Albytova, T.S. Slambekova. – Almaty: SSK, 2017. – 272 p. (https://rmebrk.kz/book/1170382) 2. Beetham, H. Rethinking Pedagogy for a Digital Age: Designing for 21st Century Learning. – Almaty: National Translation Bureau, 2019. – 328 p. (https://rmebrk.kz/book/1171570) 3. Mynbayeva, A.K., et al. Fundamentals of Pedagogy of Higher Education: Textbook. / A.K. Mynbayeva, A.B. Aitbayeva, A.M. Kudaybergenova. – Almaty: Kazakh University, 2016. – 236 p. (https://rmebrk.kz/book/1175282)

	4. Akbayeva, L.K., Akbayeva, A.N. Pedagogy of Higher Education. Psychology of Higher Education: Methodical Guidelines for Seminars for Master's Students. – Almaty: KazGASA, 2012. – 49 p. (https://rmebrk.kz/book/1105614) 5. Nagymzhanova, K.M., et al. Modern Global Higher Education System: Collection of Lectures. / K.M. Nagymzhanova, R.K. Duisembinova, L.S. Kulzhabayeva. – Nur-Sultan: Publishing House of Turan-Astana University, 2019. – 138 p. (https://rmebrk.kz/book/1179895) 6. Zhumatayeva, E. Didactics of Higher Education: Monograph. – Pavlodar: EKO, 2006. – 316 p. (https://rmebrk.kz/book/1165854) 7. Zhumatayeva, E. Application of Educational Technologies in Higher Education. // Bulletin of S. Toraighyrov Pavlodar State University. Pedagogical Series, 2008. – No. 1. (https://rmebrk.kz/book/15206) 8. Kasymbayeva, G.N. Effective Methods for Applying Interactive Teaching in Higher Education. // The Role and Place of Young Scholars in Promoting Kazakhstan's New Economic Policy: Proceedings of the International Satpayev Readings. – Almaty: Kazakhstan, 2015. – Vol. 1. – Pp. 547–550. (https://rmebrk.kz/book/1152143) 9. School Pedagogy: Teaching and Methodological Complex (Syllabus). / Comp. B.O. Kurbanaliev. – Zhetysai: Syrdariya University, 2007. – 120 p. (https://rmebrk.kz/search/) 10. Kudebayeva, Z.N. Pedagogy of Higher Education: Test Assignments: Textbook. / Taraz State Pedagogical University. – Taraz: Format-Print, 2019. – 124 p. (https://rmebrk.kz/search) 11. Belykh, A.S. Pedagogy of Higher Education: Textbook. – Lugansk: Publishing House of Luhansk National University, 2018. – 248 p. (http://dot.kostacademy.kz/bible/files/813849436.pdf)

Module title	PU 5204 Psyhology of management
Semester	1
Responsible Instructor	Sautenkova M.Yu., candidate of ps.sciences.
Language of Instruction	Russian
Correlation with the curriculum	Required component
Forms of Instruction	Lectures, seminars
Student Workload (including contact hours and SWS)	Total hours – 30 (15 h. of lectures, 15 h. of practise) Independent work: 30/30
ECTS	3
Required and Recommended Prerequisites for Taking the Module:	General Psychology, Developmental Psychology, Psychodiagnostics.
Module objectives/intended learning outcomes	The aim of this course is to explore issues related to the applied field of psychological science, with a particular focus on studying and solving management-related problems based on psychological knowledge and theories. The course helps students, as future professionals in the educational environment, to master the psychology and culture of business communication and management activities. In the process of mastering the course, special attention is paid to developing students' leadership, managerial, and reflective qualities in the field of educational management, involving them in scientific activities, enhancing their leadership abilities and professional competencies, and developing management methods, such as: A) Understanding the essence and psychological characteristics of management functions; B) The ability to independently search for, critically analyze, organize, and summarize scientific and psychological information;

	C) The ability to manage a team and to tolerate social and psychological differences; D) The ability to design, implement, and evaluate the educational process and environment in higher education institutions during the training of psychological personnel; E) Recognizing the importance of using creative potential for self-development and self-actualization.
Content	The course explores the laws, principles, and methods underlying the structure and functioning of organizations; the principles and laws that form the basis of managerial activity in organizational leadership; the nature of managers' engagement in organizational management; and the personal (physiological, psychological, and social) needs that a manager must satisfy.
Form of Examination	Written (essay)
Requirements for Study and Examinations	
References	Main References 1. Konovalenko, V. A., Konovalenko, M. Yu., & Solomatin, A. A. *Personnel Management Psychology: Textbook for Academic Bachelor's Degree.* Moscow: Yurayt Publishing, 2015. – 477 p. – (Series: Bachelor. Academic Course). 2. Mambetalina, A. S. *HR Personnel Management.* Nur-Sultan: L. Gumilyov ENU, 2021. – 145 p. 3. Maltseva, Yu. A., & Yatsenko, O. Yu. *Management Psychology.* Yekaterinburg: Ural University Press, 2016. – 92 p. 4. Alieva, M. B., Magomedova, E. E., Radzhabova, R. V., Umarieva, S. Z., & Tsakhaeva, A. A. *Management Psychology: Study Guide.* Kyiv, 2017. 5. Vesnin, V. R. *Fundamentals of Management: Textbook.* Moscow: Prospekt, 2010. – 97 p. 6. Ostrovskiy, E. V. *Management Psychology: Study Guide.* Moscow: INFRA-M, 2011. – 249 p. http://znanium.com/bookread.php?book=313827 7. Bazarov, T. Yu. *Personnel Management Psychology: Textbook and Practicum for Academic Bachelor's Degree.* Moscow: Yurayt Publishing, 2015. – 381 p. 8. Volkogonova, O. D., & Zub, A. T. *Managerial Psychology.* Moscow: Forum–INFRA-M, 2009. Additional References 9. Avdeev, V. V. *Personnel Management. Optimization of Teamwork: Reengineering Technology: Practicum.* Moscow: FiS, 2008. – 256 p. 10. Morozyuk, S. N. *Personality Psychology. Character Psychology: Textbook for Universities.* Moscow: Yurayt Publishing, 2024. – 217 p. – (Higher Education). – ISBN 978-5-534-06609-8. [Available at Yurayt Educational Platform: https://urait.ru/bcode/540621] 11. Ivanova, V. S. *Management Psychology: Study Guide.* Tomsk: Tomsk Polytechnic University Press, 2011. Electronic Resources 1. https://www.inter-nauka.com/uploads/public/15058901949362.pdf 2. Russian State Library Dissertation eLibrary: http://diss.rsl.ru/ 3. LitRes Electronic Library: http://biblio.litres.ru

Module title	**Foreign Language (professional)**
Semester	1
Responsible Instructor	Yerzhanova G.A. PhD., Associate Professor
Language of Instruction	English language

Correlation with the curriculum	Required component
Forms of Instruction	CER, MOOC, etc.
Student Workload (including contact hours and SWS)	practical classes – 30 hours, SIWT– 15 hours, SIW– 45 hours (lecture, lesson, labworks, project, seminar etc.) / 90 hours
ECTS	3
Required and Recommended Prerequisites for Taking the Module:	Prerequisites: English language (level B1)
Module objectives/intended learning outcomes	**Module objective:** the formation of intercultural communicative competence of students, and as its component, professionally based intercultural communicative competence, which allows them to integrate into the international professional environment and use a professional foreign language as a means of intercultural, scientific and professional communication. **Learning outcomes:**
Content	**Language as the mirror of culture. Education and Technology. People in science. My master's degree work. Spheres of communication. Social sphere of communication**
Form of Examination	written
Requirements for Study and Examinations	Students who have mastered the course material and scored at least 50% of the total rating based on the results of the 1st and 2nd midterm tests are allowed to take the final exam
References	Main references: Abdrakhmanova, T.M. *Professionally Oriented English Language: Teaching and Methodological Manual*. – Almaty: CyberSmith, 2019. – 108 p. https://elib.kz/ 2. Harrison, R., Pathare, G., May, P., & Emma. *Headway: Academic Skills – IELTS Study Skills Edition*. – Oxford: Oxford University Press, 2013. – 240 p. https://ps.ua1lib.org/book/3297727/3df467?dsource=recommend 3. Aleshugina, E.A., Kryukova, G.K., & Loshkareva, D.A. *Professionally Oriented English for Master's Degree Students [Text]: Textbook for Universities*. / Nizhny Novgorod State University of Architecture and Civil Engineering. – Nizhny Novgorod: NNGASU, 2016. – 95 p. ISBN 978-5-528-00113-5 https://pnu.edu.ru/ru/faculties/full_time/ffpmk/eng/e-lib/ 4. Kalinichenko, E.B., Romanova, O.V. (Comps.) *English for Science: Teaching and Methodological Manual for Master's Students*. – Saratov, 2016. – 75p. http://www.sgau.ru/files/pages/21056/14702970647.pdf

Module title	OPNI 5205 Organization and Planning of Scientific Research
Semester	1
Responsible Instructor	Isimov A.M.
Language of Instruction	English
Correlation with the curriculum	University Component (UC) in the cycle of basic disciplines (BD)
Forms of Instruction	Lectures, practical classes, SIWT, SIW
Student Workload (including contact hours and SWS)	Total workload: 90 hours Contact hours: 30 hours (15 hours of lectures, 15 hours of practical classes) Independent learning, including exam preparation: 30 hours of SIWT, 30 hours of SIW
ECTS	3
Required and Recommended Prerequisites for Taking the Module:	Undergraduate courses

Module objectives/intended learning outcomes	The purpose of the course Research Methodology is to help students who have mastered research skills and oral presentation to develop a scientific project.
Content	The subject content enhances knowledge of research methodology, research and development (R\&D), research components, preparation of copyright documents, innovative research planning, project life cycle, and cost estimation, as well as criteria for selecting ideas and assessing quality. It also promotes the acquisition of practical skills necessary for conducting research. The course facilitates the development of essential skills and abilities for effectively using artificial intelligence as an additional resource in research, thereby expanding learners' research capabilities.
Form of Examination	essay
Requirements for Study and Examinations	A. Apply knowledge at a professional level, understand and demonstrate elements of advanced knowledge in one's field, and demonstrate knowledge and understanding of research methodology. B. Formulate conclusions and solve problems in the field, collect data, and utilize information to develop scientific judgments. C. Classify lectures and scientific concepts, applying fundamental knowledge within the framework of theoretical and applied linguistics in research and professional contexts. D. Conduct scientific analysis, write essays, plan, and apply qualitative and quantitative methods in humanitarian research. E. Assess the importance of course material and the relevance of conclusions, efficiently find, analyze, and contextually process scientific, technical, natural science, and general scientific information in relation to problematic issues.
References	Main References: **Dinaeva, B.B., & Sapina, S.M.** *Theoretical and Practical Foundations of Academic Literacy*. – Astana: "KazGYUU Consulting" LLP, 2016. – 164 p. **Isenova, F.K.** *Teaching and Methodological Guide to the Discipline "Academic Writing and Reading" (Module 2: Scientific Orientation)*. – Astana: KazGYUU University Publishing House, 2015. – 144 p. **Korotkina, I.** *Academic Writing: A Teaching Guide for School Principals and Education Specialists*. – Saarbrücken, Germany: Lap Lambert Academic Publishing GmbH & Co., 2011. – 179 p. **Radaev, V.V.** *How to Organize and Present a Research Project: 75 Simple Rules*. – Moscow: HSE State University, INFRA-M, 2001. – 202 p. (Electronic version: http://narod.ru/disk/2882665000/radaev.rar.html) List of Additional references: **Booth, W.C., Colomb, G.G., & Williams, J.M.** *Research: Sixteen Lessons for Beginning Authors* / Translated from English by A. Stanislavsky. – Moscow: Flinta: Nauka, 2004. – pp. 51–90. (http://aperlov.narod.ru/ar/posobija.htm) **Eco, U.** *How to Write a Thesis: Humanities*. Teaching and Methodological Manual. – Moscow: Universitet, 2001. – 240 p. (Electronic version: www.hcc.ru/download/ef7ecacfa0bc050dea6287f39c7aa566.attach) Web – Resources and Support 1. www.refseek.com 2. www.worldcat.com 3. https://link.springer.com 4. www.bioline.org.br 5. https://repec.org 6. www.science.gov 7. www.pdfdrive.com 8. www.base-search.net

Module title	Methods of Teaching Physics in Specialized Classes in Secondary School
Semester	1

Responsible Instructor	Ubaev Zhiger Kartbaevich, docent, PhD
Language of Instruction	Kazakh
Correlation with the curriculum	Major discipline, university component
Forms of Instruction	Lectures, laboratory work, SIWT, SIW
Student Workload (including contact hours and SWS)	Total workload: 150 hours - Contact hours: 45 hours - 15 hours lectures - 30 hours laboratory work - Independent work: - 30 hours SIWT - 75 hours SIW
ECTS	5
Required and Recommended Prerequisites for Taking the Module:	Methods of teaching physics, Bachelor's degree
Module objectives/intended learning outcomes	Objective: The purpose of teaching electrodynamics is to understand the theoretical laws of the electrical department. The formation of the personality of a modern teacher who has mastered professional and pedagogical competencies in accordance with the system of general secondary education, the implementation of a close connection with the content of training for work in the conditions of a profile school. Intended Learning Outcomes: - Has fundamental scientific and professional training in the field of physics, processes, stores scientific information and uses modern information technologies; - Solves, formulates modern scientific and practical problems in physics, conducts, organizes scientific, experimental-scientific activities in the chosen direction; - Summarizes new knowledge in the field of physics through the use of modern educational technologies; - Has a culture of thinking and public speech, correctly and logically studies his thoughts in oral and written form. - Makes decisions in special situations, takes social and ethical responsibility for the decisions made; strives for self-development, self-realization, the use of creative potential; thinks abstractly, presents his point of view
Content	Topics covered in this module include: The need for specialized training in secondary school is to provide students with a deeper study of individual subjects of general education programs, create conditions for future teachers to differentiate the content of education for students by creating individual educational programs, adapt school graduates to innovations through the basics of pedagogical practice to master modern educational programs of a new format, ensure continuity between secondary and higher education.
Form of Examination	Traditional (written/oral prompts -based exam)
Requirements for Study and Examinations	- Active participation in all types of training - Timely submission of SIWT and SIW tasks - Mastery of theoretical material and lab skills - Academic integrity and individual work submission - Use of approved textbooks and digital tools
References	1.Omarova, V.K., & Nurgalieva, A.K. Problems of Transition of a Comprehensive School to 12-Year Education. – Almaty: Otan, 2014. 2.Slastenin, V.A., & Podymova, L.S. Pedagogy: Innovative Activity. – Moscow, 1997. 3.Abylkasymova, A.E. Public Education Development System in the Modern World: What Is the Difference? What's the Matter? – Almaty, 2003.

Module title	Methodology for Studying Physics Concepts Based on New Educational Technologies

Semester	1
Responsible Instructor	Shugayeva Tilectes Zhalgasovna
Language of Instruction	Kazakh/Russian English
Correlation with the curriculum	Basic discipline, university component
Forms of Instruction	Lecture, practical classes, SIWT, SIW.
Student Workload (including contact hours and SWS)	Total work load: 120 h Contact hours: 45 h (15 h lectures, 25 h practical classes Independent study, including preparation for exams, in hours: 25 h SIWT, 80 h SIW
ECTS	5
Required and Recommended Prerequisites for Taking the Module:	Pedagogy, psychology, methods of teaching physics in high school, general course of physics.
Module objectives/intended learning outcomes	Learning objective: Formation of knowledge about the content and organization of the educational process in physics in institutions of secondary general (complete) education within the framework of modern educational technologies. The intended learning outcomes are: 1. Plans basic scientific and professional training in the field of physics, uses modern information technologies, including methods of research, processing and storage of scientific information; 2. Able to participate in the development of basic and additional; educational programs, develop their individual components (including using information and communication technologies); 3. Able to understand and put into practice theoretical foundations organization and planning of physical research; 4. Capable of designing, organizing and analyzing pedagogical activities, ensuring consistency presentation of material and interdisciplinary connections between mathematics and physics with other disciplines; 5. Able to form a physical and mathematical culture students, including those with special educational needs in class and extracurricular activities; 6. Able to determine the range of tasks within the framework of the set goal and choose the best ways to solve them based on existing legal regulations, available resources and limitations; 7. Able to carry out social interaction and implement your role in the team.
Content	The program of the course "Methodology for studying the concepts of a physics course based on new learning technologies " allows students to prepare for future professional activities, to master practical and theoretical knowledge, necessary both when passing pedagogical practice, and in further independent work on the profile. The study of the discipline is closely related to physics, computer science, pedagogy and psychology, human anatomy and physiology and other disciplines, therefore, the theoretical provisions of the methodology for teaching physics at school and private issues of teaching specific topics were developed on the basis of a synthesis of related
Form of Examination	Traditional (prompts)
Requirements for Study and Examinations	- obtaining quality knowledge; - fulfil the teacher's requirements specified in the syllabus; - independently complete all types of work (SIWT assignments, coursework, graduation theses, etc.) and submit them to the teacher on time; - use reliable and trustworthy sources of information; - not to provide their work for cheating other students.
References	1. Selevko G.K. Encyclopedia of educational technologies. M., 2008.-315p

	2. Zuev, P.V. Formation of key competencies of students in the process of teaching physics at school: a methodological manual for teachers / P.V. Zuev, O.P. Merzlyakova. - 3rd ed., reprinted. - Moscow: Flinta Publishing House, 2017. - 101 p. : ill. - Bibliography in the book. - ISBN 978-5-9765-1362-4; 3. Selevko G.K. Pedagogical technologies based on information and communication tools. - M., 2008.- 255p

Module title	Classical Physical Experiment
Semester	2
Responsible Instructor	Ubayev Zh.K.
Language of Instruction	Kazakh, Russian
Correlation with the curriculum	Required
Forms of Instruction	Lecture, practical classes, SIWT, SIW.
Student Workload (including contact hours and SWS)	Teaching load (including contact hours, SIW) Total work load: 120 h Contact hours: 45 h (15 h lectures, 25 h practical classes Independent study, including preparation for exams, in hours: 25 h SIWT, 80 h SIW
ECTS	5
Required and Recommended Prerequisites for Taking the Module:	General physics course, physics teaching methodology.
Module objectives/intended learning outcomes	Purpose: To familiarize graduate students with the fundamental ideas and methods of conducting new educational experiments in physics, techniques for solving experimental physics problems, and the methodology for conducting physical experiments. Learning Outcomes: 1. Plans fundamental scientific and professional training in the field of physics, applying modern information technologies for researching, processing, and storing scientific information. 2. Formulates the theory of contemporary school experiments in physics, conducts, organizes, and evaluates school experiments. 3. Draws conclusions and analyzes new knowledge in the field of physics using modern educational technologies. 4. Demonstrates a culture of thinking and public speaking, articulates thoughts correctly and logically in both oral and written forms.
Content	In physics, the primary source of knowledge and research method is the experiment. A classical physical experiment is a scientific method for studying physical phenomena; therefore, it must include the essential elements of a physical experiment, through which students can gain an understanding of the scientific experimental method. An educational experiment is the demonstration of a physical phenomenon in a lesson under conditions that make it more convenient for study, using specialized instruments. Therefore, it simultaneously serves as a source of knowledge, a teaching method, and a form of visualization.
Form of Examination	Verbal, prompts
Requirements for Study and Examinations	Students who have mastered the course material and scored at least 50% of the total rating based on the results of the 1st and 2nd midterm tests are allowed to take the final exam
References	**Main References** 1. Kosinov, A.A. Methods of Physical Experiment: A Textbook for Universities. – Moscow: Yurayt Publishing, 2018. 2. Laboratory Work in Molecular Physics: A Study Guide / A.M. Pavlov, A.T. Protasov, G.S. Smolina et al. – Ust-Kamenogorsk: Publishing House of East Kazakhstan State University, 2007.

	3. Aimagambetova, Z.K. Electricity and Magnetism: A Study Guide. – Almaty: Evero, 2022. 4. Dzhamanbalin, K.K., Kholin, E.O., & Kozkina, N.N. Virtual Physics Laboratory Practicum: For Students of Technical Universities. – Kostanay: Kostanay State Technical University, 2006. **Additional References / Materials** 1. Berkeley Physics Course. Volume 6: Physical Laboratory. – Moscow: Nauka, 1972. 2. Akhmetov, E.A., Baimbetov, F.B., & Omirbekova, Z.K. General Physics Practicum: A Study Guide. – Almaty: Kazakh University, 2006. 3. Varlamov, S.D., Zilberman, A.R., & Zinkovsky, V.I. Experimental Problems in Physics Lessons and Physics Olympiads. – Moscow: MCCME Publishing, [year not specified].

EP	7M01502 - Physics
Module title	Information Technologies in Physics Teaching
Semester	2
Responsible Instructor	Sagimbayeva Shynar Zhanuzakovna Associate Professor
Language of Instruction	Kazakh languages
Correlation with the curriculum	Required component
Forms of Instruction	PBL
Student Workload (including contact hours and SWS)	Lectures – 15 hours, practical classes – 30 hours, SIWT– 25 hours, SIW– 80 hours (lecture, seminar etc.) / 150 hours
ECTS	5
Required and Recommended Prerequisites for Taking the Module:	Prerequisites: information and communication technologies, mechanics, molecular physics, electricity and magnetism, optics;
Module objectives/intended learning outcomes	Module objective: Improving the quality of education of undergraduates through new information technologies in physics teaching Learning outcomes: 1. Basic concepts and definitions of information and communication technologies used in physics teaching, knowledge and understanding of the psychological and pedagogical foundations of the use of information and communication technologies in the physics teaching process necessary for the implementation of the modern learning process in physics. 2. Modern problems of the theory and methodology of physics teaching related to the introduction of modern information and communication technologies in the learning process. Knowledge of the physics process of a general education school. 3. Ability to classify (analyze) the components of educational materials. 4. Ability to use the terminology of information and communication technologies in the methodological science and practice of the physics teaching process, ability to use modern tools of information and communication technologies to solve various methodological problems. 5. Ability to use modern information and communication technologies in educational physics experiments, adapt advanced information and communication technologies to the specific needs of the physics teaching process of a general education school.
Content	The study of the educational material included in the course should prepare undergraduates - future physics teachers of general education schools - to use modern information and communication technologies in the teaching process of physics. To form the necessary act competencies for the implementation of the modern teaching process in physics. During the training, students should get acquainted with various methods of using digital educational resources and various forms of organizing teaching using them in various subject materials.
Form of Examination	Verbal, prompts

Requirements for Study and Examinations	Students who have mastered the course material and scored at least 50% of the total rating based on the results of the 1st and 2nd midterm tests are allowed to take the final exam
References	Main references: 1. Fayzullaev A. Physics teaching methodology. Textbook. – Almaty, Women's University, 2014. – 338 p. 2. Zhusupkaliyeva G.K., Dzhumasheva A.A., Kubaeva B.S. Theory and methodology of teaching physics at school: Editorial and publishing center of the M.Utemisov West Kazakhstan State University, 2012. – 195 p. 3. G.B. Alimbekova. Improving the professional training of future physics teachers based on the formation of a system of scientific concepts. -Almaty, KazNPU, 2014. – 340 p. 4. Zhanabayev methodology, Z.Zh., Tyntaeva Sh.B., Zholdasova H.B. Physics teaching methodology, Almaty, 2002. -119 p. 5. G.B. Alimbekova. Educational tool for improving the level of theoretical and methodological training of future teachers. - Almaty, KazUPU, 2008. - 206 p. 6. Akitai B.E. Teaching method of physics. Educational tool. - A.: School, 2006. 7. Theory and methodology of teaching physics at school. General questions. Study guide for students of pedagogic universities. Under ed. to S. E. Kamenetsko. - M.: Publishing center "Akademiya", 2000 - 384 p. 8. Theory and methodology of teaching physics at school. Private questions. Study guide for students of pedagogic universities. Under ed. to S. E. Kamenetsko. - M.: Publishing center "Akademiya", 2001 - 386 p. 9. Basic methodical teaching of physics. /Ed. A.V. Peryshkina V.G., Razumovsky and others. M: Drofa, 2001. 10. Basharuly R., Baizhasarova G., Tokbergenova U., Kaimuldina A. Physics. Methodological manual for teachers of 11th grade. –Almaty, School, 2007. – 88 p. 11. Basharuly R., Tokbergenova U., Kazakhbayeva D. Physics and astronomy. Teaching methodology. A tool for teachers of 7th grade. –Almaty, Atamura, 2007. – 80 p. 12. Nurkasymova S.N., Zheldybayeva B.S. Physics and astronomy. A teaching method for teachers of 7-8th grade. – Semey, 2006. – 170 p. 13. Kamenetsky S.E. Modern problems of teaching methods in physics. 14. Mastropas Z.P., Sindeev Y.T. Methodology and practice of teaching. Rostov n/d.: Phoenix, 2002. 15. Methods of teaching physics. –/Ed. V.P. Orekhova, A.V. Usova T.I. - M: Drofa, 2001. 16. Methodology of teaching physics. /Ed. V.P. Orekhova, A.V. Usova T.II. M: Drofa, 2002. 16. N.K. Gladysheva and others. Methods of teaching physics in 8-9 classes of general educational institutions. M: Prosveshchenie, 2001.

Module title	Developing Critical Thinking in Solving Non-Standard Problems in Physics
Semester	2
Responsible Instructor	Shugayeva Tilectes Zhalgasovna
Language of Instruction	Kazakh/Russian/English
Correlation with the curriculum	Optinal discipline, university component
Forms of Instruction	Lecture, practical classes, SIWT, SIW.
Student Workload (including contact hours and SWS)	Totalwork load: 120 h Contact hours: 45 h (15 h lectures, 25 h practical classes Independent study, including preparation for exams, in hours: 20 h SIWT, 60 h SIW
ECTS	4

Required and Recommended Prerequisites for Taking the Module:	molecular physics, electricity and magnetism, optics, atomic and nuclear physics, quantum mechanics, condensed matter physics
Module objectives/intended learning outcomes	**Learning objective:** Developing critical thinking in solving non-standard problems in physics **The intended learning outcomes are:** 1. Classifies applied knowledge in the field of socio-pedagogical disciplines, contributes to the formation of a highly educated individual with a worldview and culture of thinking, improves and develops professional pedagogical activity; 2. Analyzes and discusses in a foreign language on topical issues in the field of professional activity; publishes scientific work in a foreign language, using professional terminology.
Content	The subject of developing critical thinking in solving non-standard problems in physics develops the most important skills for school teachers in solving non-standard problems and provides students with the methodological foundations for explaining these methods.
Form of Examination	The exam is taken in the form of a project.
Requirements for Study and Examinations	- obtaining quality knowledge; - fulfil the teacher's requirements specified in the syllabus; - independently complete all types of work (SIWT assignments, coursework, graduation theses, etc.) and submit them to the teacher on time; - use reliable and trustworthy sources of information; - not to provide their work for cheating other students.
References	1. N. Zhanturina, L. Myasnikova. Fundamentals of Mechanics. -Aktobe.-2018. -105 p. 2. N. Zhanturina. Molecular physics. - Aktobe, 2020. - 100 p. 3. J. Aydarova, T. Sukhanova, O. Tursymatova, Sh. Skakova, A. Aimyrzaeva. A collection of physics problems. - Astana. – 2013. -288 p. 4. Zhanturina N.N. Condensed state physics. - Aktobe, 2017. - 105 p. 5. K. Shunkeyev. L/Myasnikova, N. Zhanturina, A.Tilep, Zh.Zinollin. English-Kazakh-Russian Dictionary of Physical Terms.- Aktobe, 2018.-171 p. 6. Yar-Mukhamedova G.Sh., Shunkeyev K.Sh., Zhanturina N.N. Mechanics. - Almaty: Kazakh University.-132 p. 7. S. Thornton, A. Rex. Modern physics. –University of Virginia. 2013. - 613 p.

Module title	Informatization and Computerization in Scientific Institutions
Semester	2
Responsible Instructor	Sergeyev D.
Language of Instruction	Kazakh, Russian
Correlation with the curriculum	Elective component
Forms of Instruction	Lecture, practical classes, SIWT, SIW.
Student Workload (including contact hours and SWS)	Lectures – 15 hours, practical classes – 30 hours, SIWT– 25 hours, SIW– 80 hours (lecture, seminar etc.) / 150 hours
ECTS	5
Required and Recommended Prerequisites for Taking the Module:	computer science, physics teaching methods
Module objectives/intended learning outcomes	Purpose: To study the principles of computer modeling of physical problems, as well as the processing and visualization of scientific results. Learning Outcomes: 1. Understand the principles of computer modeling. 2. Be familiar with various types of computer modeling.

	3. Be able to use applied computer programs for data processing and visualization. 4. Implement a computer experiment when solving problems that require computer modeling.
Content	The course is aimed at studying applied computer programs and further applying them for processing and visualizing scientific results. The following sections are covered: Using Excel for processing and visualizing scientific results. Using MathCAD for solving physical problems. Using the Origin package for processing and visualizing scientific results. Using CorelDRAW for designing scientific results.
Form of Examination	Traditional
Requirements for Study and Examinations	obtaining quality knowledge; - fulfil the teacher's requirements specified in the syllabus; - independently complete all types of work (SIWT assignments, coursework, graduation theses, etc.) and submit them to the teacher on time; - use reliable and trustworthy sources of information; - not to provide their work for cheating other students.
References	Main References 1. Bisembiev, K.A. Solving Problems in the Physics Course Using Computer Technologies. – 2011. – 175 p. 2. Balabekov, K.N., Zhalgasbekova, Zh.K., & Alteev, Zh. Modeling Physical Processes in a Programming Environment: A Study Guide. – Almaty: Evero Publishing, 2014. – 332 p. 3. Methods of Computer Calculations and Their Application to Physics Problems: A Methodological Guide. – Moscow: MIPT Publishing, 2012. 4. Nikamii, V.A. Analog-to-Digital and Digital-to-Analog Converters: A Handbook. – St. Petersburg: Korona Print; Moscow: Altex-A, 2003. – 224 p. 5. Olifer, V.G., & Olifer, N.A. Computer Networks: Principles, Technologies, Protocols. A University Textbook. – St. Petersburg: Piter, 2009. – 864 p. Additional References / Materials 1. Methodological Approaches to the Development of Digital Educational Resources: Methodological Recommendations. – Astana: NAO I. Altynsarin, 2014. – 655 p. 2. Isakova, O.P., & Tarasevich, Yu.Yu. Processing and Visualization of Data from Physical Experiments Using Origin Software: Analysis and Spectrum Processing. – Astrakhan: Publishing House of OGOUP DPO "AIPKP", 2007. – 68 p. Internet Resources 1. http://fizmat.by/kursy/molekuljarnaja

Module title	Fundamentals of Superconductivity Physics
Semester	3
Responsible Instructor	Sergeyev D.
Language of Instruction	Kazakh, Russian
Correlation with the curriculum	Elective component
Forms of Instruction	Lecture, practical classes, SIWT, SIW.
Student Workload (including contact hours and SWS)	Lectures – 15 hours, practical classes – 30 hours, SIWT– 25 hours, SIW– 80 hours (lecture, seminar etc.) / 150 hours
ECTS	5

Required and Recommended Prerequisites for Taking the Module:	Includes an introduction to materials science, condensed matter physics, electricity, and magnetism.
Module objectives/intended learning outcomes	To provide a general understanding of the properties and structure of solid crystalline substances. The course describes widely used and practically significant crystallographic methods (such as crystal optics, X-ray diffraction, etc.). Learning Outcomes: Scientifically substantiate the nature of superconductivity and describe its types. Discuss contemporary issues of superconductivity and solve related problems. Learn about the applications of superconducting materials and acquire methods for their processing and research.
Content	Currently, the issue of superconductors is attracting increased interest from scientists around the world, as they are considered some of the most promising materials. When the temperature drops sharply, the resistance of superconductors decreases to zero, making them applicable in many areas of electrical engineering. Modern research is focused on the phenomenon of superconductivity at room temperature. Future physics teachers and instructors need to understand the properties of these materials, as studies, innovations, and issues in the fields of electricity, magnetism, and technology are fundamentally based on this phenomenon.
Form of Examination	Traditional
Requirements for Study and Examinations	- obtaining quality knowledge; - fulfil the teacher's requirements specified in the syllabus; - independently complete all types of work (SIWT assignments, coursework, graduation theses, etc.) and submit them to the teacher on time; - use reliable and trustworthy sources of information; - not to provide their work for cheating other students.
References	**Main References** 1. **Ginzburg, V.L.** *Superconductivity: Yesterday, Today, and Tomorrow*. – *Physics-Uspekhi*, 2000. 2. **Shunkeev, K.Sh.** *Luminescence and Radiation Defects in Alkali Halide Crystals with Lowered Lattice Symmetry*. – Aktobe: AGPI Publishing, 2012. – 516 p. 3. **Panova, T.V., & Gering, G.I.** *Physics of Condensed Matter*. – Omsk, 2008. – 101 p. 4. **Kurenkeev, T.B.** *Theory of Solids*. – Almaty, 2013. – 376 p. 5. **Ismailova, G.A., Prikhodko, O.Yu., & Tashkeeva, G.K.** *Introduction to Physical Materials Science: A Study Guide*. – Almaty: Kazakh University, 2014. – 143 p. 6. **Akylbekov, A.T., & Dauletbekova, A.K.** *Physics of Condensed State*. – Almaty: Evero, 2014. – 198 p. 7. **Abrikosov, A.A.** *Fundamentals of the Theory of Metals*. – Moscow: Nauka, 1987. 8. **Ashcroft, N., & Mermin, N.** *Solid State Physics*, Vol. 2. – Moscow: Mir, 1979. **Additional References** 1. **Bednorz, G.I., & Müller, K.A.** *A New Approach to the Study of High-Temperature Superconductivity*. – In *The Discovery of High-Temperature Superconductivity*. – Moscow: Znanie, 1989. 2. **Mneyan, M.G.** *Superconductors in the Modern World*. – Moscow: Prosveshchenie, 1991. 3. **Pavlov, P.V., & Khokhlov, A.F.** *Solid State Physics*. – Moscow: Vysshaya Shkola, 2000. 4. **Tretyakov, Yu.D.** *Chemical Superconductors Ten Years After the Discovery*. – *Soros Educational Journal*, No. 3, 1999. 5. **Schmidt, V.V.** *Introduction to the Physics of Superconductors*. – Moscow: Nauka, 1982.

Module title	Physics of Nanotechnology
Semester	3
Responsible Instructor	Amirbek Zarlykovich Bekeshev, candidate of physical and mathematical sciences, associated professor
Language of Instruction	Kazakh/Russian
Correlation with the curriculum	Basic discipline, university component
Forms of Instruction	Lecture, practical classes, SIWT, SIW.
Student Workload (including contact hours and SWS)	Total workload: 150 h Contact hours: 45 h (15 h lectures, 30 h practical classes) Independent study, including preparation for exams, in hours: 25 h SIWT, 80 h SIW
ECTS	5
Required and Recommended Prerequisites for Taking the Module:	*General Physics* and *General Chemistry*
Module objectives/intended learning outcomes	**Learning objective:** The aim of studying the course "Methods and Equipment of Nanotechnology" is to explore the main classes of nanomaterials and nanotechnologies. **The intended learning outcomes are:** 1. Knows the main classes of nanomaterials and their properties. 2. Can distinguish nanotechnologies for obtaining modern nanomaterials, including key optical materials, as well as the main trends and directions of current developments. 3. Knows the methods of obtaining nanomaterials and nanotechnologies using application systems, search methods, and research techniques in the field. 4. Can apply methods for obtaining nanomaterials in practice. 5. Can operate nanotechnology equipment.
Content	colloidal solutions, disintegration, mechanochemical synthesis, hydrothermal synthesis, synthesis of two-dimensional nanomaterials, substrate deposition, epitaxy, chemical precipitation from solutions, heterostructures, severe plastic deformation.
Form of Examination	Oral Exam (prompts)
Requirements for Study and Examinations	- obtaining quality knowledge; - fulfil the teacher's requirements specified in the syllabus; - independently complete all types of work (SIWT assignments, coursework, graduation theses, etc.) and submit them to the teacher on time; - use reliable and trustworthy sources of information; - not to provide their work for cheating other students.
References	1. Tuyakbaev, S., Nasokhova, Sh. B., Krongart, B. A., et al. *Physics. Part 2. Natural Science and Mathematics Track: Grade 11*. 2020. 2. Mansurov, Z. A., et al. *Fundamentals of Nanotechnology: Textbook*. 2014. Available at: https://rmebrk.kz/book/1020587 3. Zhubayev, A. K., & Nurtazina, A. S. *Introduction to Nanotechnology: Laboratory Work Methodical Guide*. 2015. 4. Nevolin, V. K., & Alpysbaeva, B. E. *Physical Fundamentals of Scanning Tunneling Nanotechnology: Teaching Guide*. 2012. Available at: https://rmebrk.kz/book/1175095 5. Yesmova, O. A., et al. *Practicum on Fundamentals of Nanotechnologies*. 2017. Available at: https://rmebrk.kz/book/1180723

EP	7M01502-Physics
Module title	Science of Materials and Technology of Structural Materials
Semester	4
Responsible Instructor	Zhubayev Abzal Kantarbayevich, Ass. Prof.

Language of Instruction	Kazakh
Correlation with the curriculum	Elective component
Forms of Instruction	CER, MOOC, etc.
Student Workload (including contact hours and SWS)	Lectures – 15 hours, practical classes – 30 hours, SIWT – 25 hours, SIW – 80 hours (lecture, lesson, project, seminar, etc.).) / 150 hours
ECTS	5
Required and Recommended Prerequisites for Taking the Module:	Prerequisites: Introduction to the specialty, Chemistry, Physics, Applied Mechanics.
Module objectives/intended learning outcomes	The purpose of studying the discipline to learn how to master and practice the theories of mechanical, chemical, heat treatment to effectively change the properties of metals and alloys in accordance with the requirements of economics, ergonomics, operation. Learning outcomes: 1. Shows the importance of engineering for the development of all sectors of the state. Knows the main types of engineering and their functions. 2. Knows the principles of operation of instruments for analyzing the structure of metals and alloys; selects simple types of heat treatment for metals and alloys and assigns modes. Distinguishes and understands the features of structural materials. 3. Complies with the main provisions of the discipline in accordance with the direction in which it works. Assigns structural materials according to the requirements for each formation. 4. Analyzes the structure of materials. Analyzes the impact of harmful inclusions (useful or harmful) in the composition of structural materials. 5. Analyzes the effective use and technological properties of structural materials; learns modern technological innovations used in the field of mechanical engineering. 6. Finds ways to effectively process structural material in accordance with the requirements; finds solutions to problems arising in production conditions from its professional point of view.
Content	Methods of production of ferrous and non-ferrous metal base alloys (steel, pig and brass, bronze, silumin, duralumin), types of their thermal, mechanical processing, non-metallic materials, often used in industries in the field of Mechanical Engineering and other engineering. Ways to give the necessary shapes to various mechanisms and products by means of technological processing of basic structural materials (casting, baking, pressure processing, cutting processing).
Form of Examination	Written
Requirements for Study and Examinations	Students who have mastered the course material and scored at least 50% of the overall rating based on the results of the 1st and 2nd intermediate tests are allowed to take the final exam
References	Main references: 1. Nemerebayev M. Technology of materials and structural materials: textbook, 2011. (in Kazakh) 2. Okanov E.L., Samsaev M.B. Materials Science and technology of structural materials: textbook. 2009. (in Kazakh) 3. Suteeva M.A., Mukhangaliyeva Sh.A. Methodological guidelines for practical training in the discipline industry materials science and technology of structural materials. 2015. (in Kazakh) 4. Akhmetzhanov B.K. Laboratory workshop on Materials Science and technology of structural materials: 2013. (in Kazakh) 5. Mashekov S.A. Materials Science and technology of structural materials: textbook. Part 1, 2017. (in Kazakh)

Module title	Using a Digital Laboratory in Physics Education
Semester	3

Responsible Instructor	Lushchik A.Ch. – doctor of Physical and Mathematical Sciences, Professor.
Language of Instruction	Russian, Kazakh languages
Correlation with the curriculum	Elective component
Forms of Instruction	Lecture-based teaching, Problem-solving sessions, Case studies, Collaborative learning, Blended learning, etc.
Student Workload (including contact hours and SWS)	Lectures – 15 hours, practical classes – 30 hours, , SIWT– 25 hours, SIW– 80 hours / 150 hours
ECTS	5
Required and Recommended Prerequisites for Taking the Module:	Prerequisites: Mathematics, Informatics, Mechanics, Molecular Physics, Optics, Electricity and Magnetism, Atomic Physics
Module objectives/intended learning outcomes	**Module objective:** The main objective of this course is to teach future teachers how to work with digital laboratories. **Learning outcomes:** ● Understand the role and importance of digital laboratories in modern physics education; ● Operate digital laboratory equipment and software for conducting physics experiments; ● Design and implement interactive lab activities using digital tools; ● Collect, analyze, and interpret experimental data using digital systems; ● Integrate digital lab technologies into lesson plans and classroom instruction; ● Assess student learning through technology-enhanced experimental work.
Content	The IT sector occupies a significant place in the global market. Therefore, if we guide and train young people to specialize in this field, it is evident that we will enter the global arena. This is because the demands of the times require it. It means creating large-scale centers, collecting statistical data, conducting proper analysis, and presenting well-grounded conclusions. Digital technology has proven to be a self-sustaining and reliable tool for accelerating economic development. The President's Address to the Nation of Kazakhstan, "Kazakhstan's Third Modernization: Global Competitiveness", was a clear and comprehensive message that raised key issues vital for the future of our country.
Form of Examination	Oral exam
Requirements for Study and Examinations	Students who have successfully mastered the course material and achieved at least 50% of the total score from the 1st and 2nd midterm assessments are eligible to take the final exam.
References	1. Physics Through Inquiry. High School. Teacher Guide. – USA: PASCO, 2015. – 520 p. 2. Advanced Physics Through Inquiry. – USA: PASCO, 2016. – 278 p. 3. Bird, J. – *Fundamentals and Technology of Electricity and Electronics. Textbook. Part 1.* (Kazakh edition), 2013. 4. Jumadillayev K.N. – *Teaching Methodology of Physics: Textbook.* – Almaty: Association of Higher Educational Institutions of Kazakhstan, 2016. 5. Zhanturina N.N., Myasnikova L.Y. – *Fundamentals of Mechanics,* 2018. 6. Schwab K. – *The Fourth Industrial Revolution.* – Almaty: National Translation Bureau, 2018. – 200 p. 7. Kenny A. – *A New History of Western Philosophy. Volume 2: Medieval Philosophy.* – Almaty: Public Foundation "National Translation Bureau", 2018. – 400 p.