

CONTENTS

1. Objectives and tasks of the educational program on specialty 5B010900 – Mathematics
2. Competences of a graduate on the specialty 5B010900 – Mathematics developed as a result of acquiring the educational program
3. Documents regulating the contents and arrangement of the educational process on specialty 5B010900 – Mathematics
 - 3.1 Modules description
 - 3.2 Standard curriculum
 - 3.3 Modules contents
 - 3.4 Elective disciplines recommended

1. Objectives and tasks of the educational program on specialty 5B010900 – Mathematics

The objective of the educational program is training qualified pedagogical personnel on Mathematics who are very responsible in social and civil matters, able to perform professional activity in the following spheres:

- Education and development of a universally educated person,
- Developing systematic knowledge of Mathematics,
- Organization of up-to-date study process on Mathematics,
- Conducting scientific research.

- **General tasks of the educational program:**
- Providing qualified professional training of future Math teachers in accordance with social demands and world education standard;
- Developing the system of key competences, and general scientific and specialized knowledge, abilities and skills of future Math teacher, as well;
- Acquiring ways of physical, moral and intellectual self-development, developing psychological literacy, thinking and behavioral culture.

2. Competences of a specialty 5B010900 – Mathematics graduate developed as a result of acquiring the educational program

Development of the following competences provides realization of the objectives and tasks of the educational program:

- general cultural competences;
- professional competences;
- subject competences.

The general cultural competences are characterized by the fact that a graduate:

- 2.1.1 *is able to* develop and assess the level of personal ambitions and has the skills to enhance the intellectual development of trainees;
- 2.1.2 *is able to apply* general regulations and methods of social, human sciences and economics to solving social and professional problems;

2.1.3 logically and correctly *formulates and utters* his/her ideas in mother tongue, *has skills* of oral and written speech in Kazakh (Russian), foreign languages for working at scientific texts and public speaking;

2.1.4 *applies* the knowledge of foreign language to communication and comprehension of special texts;

2.1.5 *applies* main methods, ways and means of gaining, storing and processing information; *is able to* work on a computer, including working in global computer networks;

2.1.6 *is able to take into consideration* ethnic-cultural and confessional distinctions of the educational process engagers when cooperating socially;

2.1.7 *demonstrates* moral principles and moral behavior;

2.1.8 *realizes* the principles of organization of scientific research, ways of achieving and developing scientific knowledge;

2.1.9 *is able to develop* skills of healthy life-style in accordance with requirements of hygiene, labor protection and regulations on protection from possible negative influence.

Professional competences are characterized by the fact that a graduate:

2.2.1 *is able to model* educational process, realize it when teaching;

2.2.2 *is able to apply* means of considering general, specified (when there are different types of abnormality) mechanisms and individual features of mental and psychophysical development, is familiar with peculiarities of regulating human behavior and activities at different age;

2.2.3 *can apply* qualitative and quantitative methods of psychological and pedagogical research;

2.2.4 *is able to apply* methods of diagnosing development, communication, activities of different age children;

2.2.5 *is able to apply* the knowledge of different theories of teaching, educating and developing, and knowledge of the educational programs for various level trainees, as well;

2.2.6 *can apply* the methods of organizing different children activities;

2.2.7 *can apply* the methods of organizing joint activities and interpersonal interactions of educational engagers;

2.2.8 understands the social importance of his/her profession, follows the principles of professional ethics;

2.2.9 *knows* the methods of organizing professional activity in multicultural society taking into account peculiarities of socio-cultural structure of the society, and the laws and principles of national education, as well;

2.2.10 *is able to participate* in interdisciplinary and interdepartmental cooperation of specialists for solving professional problems;

2.2.11 *is able to apply* the major international and domestic documents on children's and invalids' rights;

2.2.12 can apply methods of critical thinking;

2.2.13 agrees on value and beliefs of inclusive education.

2.2.14 capable of learning, result-oriented and mobility that will help students develop competencies necessary for them to adapt to a changing labor-market, and that will enable them to become active and responsible citizens.

Subject competences are characterized by the fact that a graduate:

2.3.1 *realizes* the specific of secondary education, *can apply* the means of realizing succession to educating different age children;

2.3.2 *is familiar with* theoretical fundamentals and technologies of teaching Mathematics to secondary school pupils;

2.3.3 *is able to apply* knowledge of theoretical fundamentals and technologies of teaching Mathematics, can apply methods of developing subject knowledge and skills of pupils, knows how to make pupils get interested in Mathematics, is able to apply Math knowledge to everyday life;

2.3.4 *is able to apply* knowledge of theoretical, fundamental and applied Mathematics;

2.3.5 *is able to apply* Math apparatus, programming and modern computer technologies to solving practical problems;

2.3.6 *knows* modern formalized Math, information-logical models and methods;

2.3.7 *is able to apply* modern information and communication technologies to creating, developing educational resources;

2.3.8 *is able to analyze and evaluate* the quality of the educational resources for applying them to the educational process.

3. The documents regulating the contents and organization of the educational process on specialty 5B010900 – Mathematics

3.1 Module description

№	Module	ECTS	Percentage
1	General education disciplines module	24	10
1.1	Required disciplines component	24	10
1.2	Elective disciplines component	-	-
2	Professional disciplines module	60	25
2.1	Required disciplines component	60	25
2.2	Elective disciplines component	-	-
3	Модуль специальных дисциплин	144	60
3.1	Required disciplines component	81	34
3.2	Elective disciplines component	63	26
4	Diploma thesis	12	5
	Total	240	100
	Additional types of training		

3.2 Standard curriculum of specialty 5B010900 – MATHEMATICS

Duration: 4 years

Academic degree: Bachelor of Education on specialty 5B010900 – Mathematics

№	Modules and disciplines names	ECTS	Term
MGED 1	Module of general education disciplines	24	
CRD 1.1	Component of required disciplines	24	
1.1.01	History of Independent Kazakhstan	3	1
1.1.02	Kazakh (Russian) language	4	1
1.1.03	Foreign language - B1	4	1
1.1.04	Computer sciences	4	2
1.1.05	Art education	3	1
1.1.06	Economics and business	3	3
1.1.07	Philosophy of education	3	3
CED 1.2	Component of elective disciplines	-	
MPD 2	Module of professional disciplines	60	
CRD 2.1	Component of required disciplines	60	
2.1.01	Pedagogy	5	2
2.1.02	Psychology	5	2
2.1.03	Pedagogical management	3	4
2.1.04	Pedagogical rhetoric	3	3
2.1.05	Research methods	3	3

2.1.06	Age physiology and school hygiene	3	1
2.1.07	Foreign language – B 2	5	2
2.1.08	Inclusive education	3	5
2.1.09	Practice 1	6	4
2.1.10	Practice 2	9	6
2.1.11	Practice 3	15	8
CED 2.2	Component of elective disciplines	-	
MSD 3	Module of special disciplines	144	
CRD 3.1	Component of required disciplines	81	
3.1.01	Elementary Mathematics	5	1
3.1.02	Algebra	12	1,2
3.1.03	Geometry	12	3,4
3.1.04	Mathematical analysis	18	2-4
3.1.05	Differential equations	6	4
3.1.06	Probability theory and Math Statistics	6	5
3.1.07	Methods of teaching Mathematics	10	5-6
3.1.08	Methodological fundamentals of solving problems	6	5
3.1.09	Technology Assessment Criteria	3	4
3.1.10	Profession-Oriented Foreign Language	3	5
CED 3.2	Component of elective disciplines	63	

	Diploma thesis	12	8
	Total ECTS	240	
	Additional types of training		
	Physical education	12	1-4
	Religions studies	3	2
	Mangilik el	3	2

3.3 Modules content

Abbreviations of discipline cycles	Disciplines and their main sections		ECTS
1	2		3
MGED 1	Module of general education disciplines		24
CRD 1.1	Component of required disciplines		24
1.1.01	HISTORY OF INDEPENDENT KAZAKHSTAN		3
	<p>Introduction to "The History of independent Kazakhstan." The socio-political situation in Kazakhstan on the eve of independence. Constitutional Law "On the State Independence of the Republic of Kazakhstan" (16 December 1991). Recognition of Kazakhstan as full member of the world community. Determining the main directions of development of the Republic of Kazakhstan. Kazakhstan's experience in the development of constitutionalism: the stages of reforming the Constitution. Multi-vector foreign poli-</p>	<p>Expected learning outcomes:</p> <ul style="list-style-type: none"> - to understand and be able to analyze main historical events of social-economic, political and cultural development of the Republic of Kazakhstan at modern stage; - to be able to apply methods of scientific analysis to working with various sources of information on the history of independent Kazakhstan; - to have and to practically apply gained knowledge in order to be an active citizen of one's country. <p>Assessment:</p>	

	<p>cy based on the principles of international cooperation, good neighborliness and respect for the territorial integrity of other states. The transformation of the economy of the Republic of Kazakhstan and the results of economic reforms. Kazakhstan Development Strategy in the context of globalization of the world economy. The concept of Social Protection of population of the Republic of Kazakhstan. Course on the implementation of measures to provide access to the world level in the development of science and education. Revival and further development of the Kazakh culture, cultures and traditions of ethnic groups living in Kazakhstan.</p>	<p>1. To perform a critical review of published sources on one of the discipline topics. 2. To write an essay based on a complete analysis of an historical event in the history of independent Kazakhstan. Competencies: 2.1.5, 2.2.10</p>	
1.1.02	<p style="text-align: center;">KAZAKH (RUSSIAN) LANGUAGE</p>		4
	<p>Kazakh Levels B1-B2; C1-C2 master the state language aimed at improving students' skills appropriate use of vocabulary, scientific terms, syntactic structures in oral and written communication on the future profession, the ability to conduct a conversation in a language environment. For the development of business communication skills necessary to inculcate writing letters, reports, book reviews, essays, teach meaningful reading of texts and a variety of information on their future profession, and the ability to convey their thoughts to the audience. During everyday speech and occupational situations to teach free communication in a variety of conversations, to develop the ability to continue the conversation, a conversation.</p> <p>Russian Russian language as a means of communication and</p>	<p>Expected learning outcomes: acquire the skills of free communication in the Kazakh language in the language environment; knows how to properly use terminological vocabulary, syntactic structures in accordance with future specialty in speech situations; able to analyze information on own specialty, to perform writing assignments. Assessment: 1. Oral analysis of speech situations. 2. Writing essays, written conversations, text. 3. Presentation of work in pairs Competencies: 2.1.5, 2.2.1, 2.2.4, 2.2.7, 2.2.8</p> <p>Expected learning outcomes: Acquiring a lexical and terminological minimum on spe-</p>	

	its role in shaping the social and cultural world view at the level of language proficiency B1 - B2. The syntax of the Russian language on a given thematic material. Functional styles of speech as historically established system of verbal tools used in the field of human communication; variety of literary language.	cialty. Developing communication skills, developing reading and listening skills. Familiarizing with creating texts with different styles. Assessment: 1. Reciting linguistic information and structural and semantic text analysis. 2. Performing creative written assignments. Competencies: 2.1.5, 2.1.7, 2.1.9, 2.2.7, 2.2.10	
1.1.03	FOREIGN LANGUAGE - B1		4
	Prepared and unprepared dialogic and monolog speech. Communication in situations during a trip to a country of the language learnt. Reaction to partner's statements in accordance with functional varieties of a dialog (dialog – information exchanging, opinions exchanging, etc.), communication sphere and speech thematic. Micro-narration (about events, dream, hope, etc.) in accordance with communication sphere and speech thematic. Introducing homeland and culture in foreign language using collocations, clichés as an element of speech etiquette. Reading foreign texts consisting of frequent everyday and profession-related words. Writing essays on familiar or interesting for students topics.	Expected learning outcomes: - ability to participate in dialogs on familiar/interesting topic (for example, “family”, “hobby”, “occupation”, “travelling”, “current events”) without preparation; - ability to reason and explain his/her ideas, intentions, to tell a story or expose the plot of a book and express his/her attitude to it; - ability of understanding texts on the topics concerning the lingual material learnt; - Ability to find and understand a necessary information containing everyday material (letters, leaflets, short official documents); Ability to describe his/her experience expressing his/her attitude in the form of a simple logical text. Assessment: 1) to express his/her opinion on everyday topics (family, hobby, job, travelling, current events); 2) to narrate about homeland and culture in foreign language; 3) to understand content of a foreign text; 4) to write a letter with describing life events and	

		impressions. Competences: 2.1.5 2.1.7 2.1.9 2.2.7 2.2.10 2.3.1 2.3.6 2.3.8	
1.1.04	COMPUTER SCIENCES		4
	Information communication technologies(ICT) as tools for the interactive data. The development of information technology training and educational web-resources. Open education. The system of e-learning. Distance interaction, social networks and virtual activities. The problem of information security of the individual.	Expected learning outcomes: to operate the electronic materials containing different types of information (text, graphics, audio, video, etc.); to participate in distance interaction (consultations, conferences); to analyze, synthesize, process information using modern information technologies; Assessment: 1. the design and interpretation of the data presented in the form of charts, graphs, tables for use in educational activities; 2. the development of interactive materials using new ICT; 3. the creation of an educational multimedia product. Competencies: 2.1.1, 2.1.2, 2.1.5, 2.2.1, 2.2.8, 2.2.10	
1.1.05	ART EDUCATION		3
	Basic knowledge of the major milestones of the formation and development of art and art culture from antiquity to the present. The course covers all kinds of art that provides an overview of the evolution of moral and aesthetic world of the Kazakhs, the elements of rituals and their significance for contemporary Kazakhstani citizens.	Expected learning outcomes: knows and understands moral and ethical fundamentals of Kazakh traditional and modern art in its diversity; is able to apply the main terminological and methodological instruments; understands and realizes one's importance in the process of preserving and conveying cultural values Assessment: 1. ability to think logically and to reflect on Kazakhs' spiritual and aesthetic mentality; 2. to know theoretical material and to be able to apply it correctly and in proper time;	

		3. to be able to use the acquired material for pedagogical purposes Competencies: 2.1.2; 2.2.8	
1.1.06	ECONOMICS AND BUSINESS		3
	<p>Economics as a science. The problem of choice in the economy. Social production and its factors. Essence, the functional forms and structure of the capital. Costs of production. Revenue from production factors. The concept and content of the business. Types of entrepreneurship. The theory of property rights, public forms of management. Commodity, money. Social-economical system. The appearance of the market as a system of economic relationship. Generation of income in conditions of market economy.</p> <p>The financial system in the Republic of Kazakhstan. The state's role in business development. Macroeconomics and its main indicators. Resource-saving economic growth. Cyclical nature of economic development. Inflation and unemployment. Kazakhstan in the world economic system.</p>	<p>Expected learning outcomes: knows and is able to apply key concepts and the set of scientific knowledge in Economics and business; is able to analyze economic data and process in market economy; is able to apply a complex of abilities in order to make a business decision independently.</p> <p>Assessment: 1. written critical analysis of an economic situation; 2. solving economical problems, finding a solution, analyzing the result; 3. group presentation. Competencies: 2.1.2, 2.1.5, 2.1.8, 2.2.12</p>	
1.1.07	PHILOSOPHY OF EDUCATION		3
	<p>The place and role of philosophy in education. Philosophy of education : origin and subject's sphere. Aims, tasks, functions of philosophy of education.</p> <p>Philosophy of education as branch of scientific knowledge: directions, conceptions, perspectives. World-wide tendencies of development of education. Philosophy of education of the West and East. Contemporary situation of education in republic of Kazakhstan. Fusion of Kazakhstan in international educa-</p>	<p>Learning outcomes: to form in next teachers to come:</p> <ul style="list-style-type: none"> - philosophical culture, - idea about modern tendencies and contradictions in development of education in the context of forming of innovative society, and also idea about the modern reference-points of development of education in the modern world, - ability independently acquire knowledge about development of education by means of informative technology, 	

	<p>tional area. Paradigm of philosophy of education in republic of Kazakhstan .Valued- purposeful priorities of education.</p> <p>Conceptual bases of the system providing in strategy of development of education. Strategies of personal growth as priorities of educational activity. Education as area of socialization and self-fulfilling.</p> <p>Informatization, globalization and continuity of education. Philosophy of informative civilization. Humanizing and liberal education.</p> <p>Standardization in education. Philosophical aspects of quality and standardization of education. Scientific aspects of philosophy of education.</p>	<ul style="list-style-type: none"> - ability to conduct professional activity, taking into account the features of socio-cultural situation of development of education, - abilities to design the model of optimal development of the system of education on the basis of the methodologically reasonable use of concepts : "educational paradigm", "socio-cultural type of education", - Knowledge and application of new philosophy of upbringing and educating of rising generation in professional activity. <p>Assessment:</p> <ul style="list-style-type: none"> - defence of projects, - implementation of creative tasks, - multimedia presentations, - preparation of essay, - designing of the educational systems. <p>Competences : PC 2.2.8., 2.2.11 PC 2.3.2, 2.3.3., 2.3.4., 3.2.8, 3.2.9</p>	
CED 1.2	Component of elective disciplines		-
MPD 2	Module of professional disciplines		60
CRD 2.1	Component of required disciplines		60
2.1.01	PEDAGOGY		5
	<p>Pedagogical profession and its features.</p> <p>Pedagogics in a system of sciences about the person.</p> <p>Formation and development of pedagogical science.</p> <p>Axiological bases of pedagogics. Methodological bases of pedagogics. Essence and content of scientific and pedagogical research.</p> <p>Methods of pedagogical research. Tendencies of development of modern world educational space. Complete pedagogical process. Features of the organization of complete pedagogical process in</p>	<p>Expected learning outcomes:</p> <p>At the end of the course a student should:</p> <p>Be able to apply the complex of knowledge of theory of educating, teaching and general categories of pedagogical science;</p> <p>Apply methodology and methods of Pedagogy to professional activity and scientific research;</p> <p>Project and realize pedagogical process at school;</p> <p>Be able to apply actual pedagogical competences in order to develop professional and personal importance in</p>	

	<p>12-years' and low-complete schools. Goal-setting in pedagogic..</p> <p>Personality as education subject. External and internal factors of socialization and development of the personality.</p> <p>Family as subject of socialization and education of the personality.</p> <p>Essence of education.</p> <p>World outlook as a main body of the being formed personality.</p> <p>Regularities and principles of education. Methods, means and forms of the education.</p> <p>Didactics in a system of pedagogical sciences.</p> <p>Training process as a complete system. Laws, regularities and principles of training. Methods and means of modern training.</p> <p>Forms of the organization of educational process. Lesson as a main form of education. Diagnostics and control during the training. Modern pedagogical technologies of training.</p>	<p>educational work with pupils.</p> <p>Assessment:</p> <ol style="list-style-type: none"> 1. Modeling and analysis of pedagogical situations. 2. Annotating articles about problems of educational process in contemporary foreign and domestic pedagogical publications. 3. Making notes of the forms of organizing pupils' educational and cognitive activities at lessons. 4. Making notes and analyzing experiences of teachers-innovators of the domestic secondary education system. 5. Making diagnostics of assessing pupils' knowledge and skills on certain discipline. 6. Modeling structure of managing a modern educational institution. 7. Performing creative written tasks. 8. Preparing presentations. <p>Competencies: 2.2.1, 2.2.3, 2.2.5, 2.2.6, 2.2.7, 2.2.8</p>	
2.1.02	<p style="text-align: center;">PSYCHOLOGY</p>		6
	<p>Basic knowledge of the main fundamental branches of psychological science from antiquity to the present.</p> <p>The course covers topical issues of formation, development of theoretical and methodological foundations of modern design and the operation and development of the human personality, summarizing research experience of psychological sciences.</p>	<p>Expected learning outcomes</p> <p>Knows and understands fundamental facts and laws of Psychological science;</p> <p>Is able to apply theoretical and methodological fundamentals, methods of psychological research;</p> <p>Understands and realizes principle laws and structures of functioning and development of a person, society, activity.</p> <p>Assessment:</p> <ol style="list-style-type: none"> 1. ability to logically think, represent, analyze psychological situations, make right decisions; 2. to know theoretical material and be able to apply it to 	

		practice; 3. To be able to apply the knowledge, abilities and skills in the sphere of psychology to the system of educational sphere. Competencies: 2.1.2; 2.2.8	
2.1.03	PEDAGOGICAL MANAGEMENT		3
	Development of management as science. Scientific and methodological fundamentals of pedagogical management. In-school management as system. Laws and principles of managing school on the basis of management. Functions of pedagogical management. Methods of management. Information technology in managing school. Styles of management. Ethics and culture of managerial activity. Marketing. Methodological work in educational institution. Competitiveness of educational institution.	Expected learning outcomes At the end of the course a student should: <ul style="list-style-type: none"> - have theoretical knowledge of pedagogical management in the sphere of education in accordance of today's requirements; - project and realize various managerial activities; - apply skills of system approach to organizing in-school management; - evaluate the quality of managerial activity in the system of educational institutions; - apply acquired theoretical knowledge to managing educational process at a secondary school. Assessment: <ul style="list-style-type: none"> - modeling structure of managing a modern educational institution; - illustrating theoretical ideas using examples from teaching practice; - preparing presentations about effective modern system of training managerial personnel for educational sphere; - performing creative written tasks. Competences: PC 2.2.8, 2.2.8, 2.2.11 PC 2.3.2, 2.3.3, 2.3.4, 2.3.6, 3.2.8, 3.2.9	
2.1.04	PEDAGOGICAL RHETORIC		3
	Rhetoric as elocution. Pedagogical rhetoric as a part of general rhetoric. Development of future teachers' communicative rhetorical skills and abilities. General	Expected learning outcomes 1. Acquiring rhetorical knowledge of the essence, regulations and norms of communication and	

	<p>norms of speaking. Importance of argumentation, the role of lingual and verbal norms. Professionally important oratorical genres (oral and written) and rhetorical communicative situations. Technology of constructing public speech. The culture of teacher's dialogical speech. Principles of moderating pedagogical discussion. Methods of teaching rhetoric to teachers. Speech etiquette and image culture of a pedagogue.</p>	<p>communicative-rhetorical abilities; 2. Development of creative active communicative person; 3. Students' realizing the essence of speech ideal as a component of culture, and pedagogical ideal as a sample of pedagogical communication.</p> <p>Assessment</p> <ul style="list-style-type: none"> - Written and oral tasks based on analyzing video record; - Analyzing speech in different communicative situations; - Students' demonstrating oratory skills when speaking on profession-oriented topics; - Students' oratory and communicative activity at lessons and during pedagogical practice. <p>Competences: 2.1.3; 2.1.4, 2.1.6; 2.2.4; 2.2.6; 2.2.7; 2.3.1, 2.3.8</p>	
2.1.05	RESEARCH METHODS		3
	<p>Purposes and problems of the course "Research Methods". Concept "research methods". Philosophical and general scientific methods of scientific research. Partial and special methods of scientific research. Principles of selection of methods of research. Methodological basis of methods of research. Choice of methods of research.</p>	<p>Expected learning outcomes: At the end of the course a student should: Have a complete idea of the system of research methods as ways of gaining scientific information and constructing scientific theories; Apply theoretical and empiric research methods to practice; Know the logics of constructing research, its main stages; Be able to apply research approaches of contemporary scientific research; Carry out independent scientific pedagogical research; Analyze, interpret and design the results of research.</p>	

		Assessment: 1. Performing scientific research in the sphere of pedagogy and psychology in accordance with the structure of research. 2. Presenting the results of research at a students' scientific and practical conference. 3. Developing programs, psychological and pedagogical recommendations of research in accordance with professional requirements. Competences: 2.1.5, 2.1.8, 2.2.3	
2.1.06	AGE PHYSIOLOGY AND SCHOOL HYGIENE General regularities of growth and development of children and teenagers. Physiology and hygiene of the nervous system, the highest nervous activity its age features. Physiology and hygiene of touch systems. Physiology of glands of internal secretion and sexual education. Age features and hygiene of the musculoskeletal device. Age features of vegetative systems. Hygienic requirements to buildings, classes, the air environment, illumination of educational rooms and the equipment of schools. Bases of formation of a healthy lifestyle at children and teenagers.	Expected learning outcomes: Knowledge of regularities of development, neurophysiologic mechanisms of training and education; physiological features of separate systems and organism as a whole during the different periods ontogenesis; differentiated approach in the solution of teaching and educational objectives depending on specific features of an organism of children; ability to apply hygienic requirements to educational process; abilities of applying the methods of evaluating physical development of children, fundamentals of experimental approaches and methods applied in age physiology and school hygiene. Assessment: Formative 1. sectional examinations and tests on completing study of specific sections of the discipline; 2. conversations, colloquiums, work at individual tasks; 3. defense of reports and papers from the list of tasks for students' self-study. Summative	3

		1. Final testing. Competences: 2.1.5, 2.1.7, 2.1.2, 2.1.3	
2.1.07	FOREIGN LANGUAGE – B2		5
	Comprehensive reports and lectures on familiar topics. News and comments about current events. Articles and information on current problems and modern literature. Active participation in a discussion concerning a familiar problem, explaining and defending his/her opinion. Giving pro and con on current problems. Writing essays, reports, letters emphasizing the most important events and impressions.	<p>Expected learning outcomes: At the end of the course a student:</p> <ol style="list-style-type: none"> 1) Understands detailed reports and lectures on familiar topics, news and commentaries about current events; 2) Reads and understands articles, information concerning current problems; 3) Is able to explain his/her point of view concerning an important problem giving pro and cons; 4) Understands basic ideas of literature texts; 5) writes essays, reports, letters interpreting important problems and arguments. <p>Assessment:</p> <ol style="list-style-type: none"> 1) to choose correct answers to questions concerning reports and lectures on familiar topics, news and comments about current events; 2) to take an active part in discussion on a familiar problem, to reason and defend his/her point of view; To write an essay or reports interpreting problems and giving arguments for pros and cons. <p>Competences: 2.1.5, 2.1.7, 2.1.9, 2.2.7, 2.2.10</p>	
2.1.08	INCLUSIVE EDUCATION		3
	Inclusive education as an important phenomenon of social and educational policy. The regulatory support of inclusive education. Models, forms and types of inclusive education. Psychological and pedagogical problems of teaching and educating disabled children	By the end of this course, students should: describe basic principles and values of inclusive education; explain necessity of inclusive education for disabled people in the logic of changing the value orientation of	

	and their families. Psychological and pedagogical technology of working with disabled children and their families. Interaction with special teachers and psychologists when organizing inclusive educational process.	<p>society and country; analyze educational needs of each child, depending on his age, sensory and intellectual abilities; design the inclusive education environment and it's didactical content for co-educating disabled and abled children; discuss with interdisciplinary team of experts the different educational methods and technologies for children with disabilities.</p> <p>Assessment</p> <ol style="list-style-type: none"> 1. to develop a mini-project with reasoning conditions for effective inclusive education; 2. to design an outline of extra-curricular activities to prepare general education school students for studying together with disabled children; 3. to define and schematically show the process of interdisciplinary interaction in organizing inclusive education process. <p>Competences: 2.1.1; 2.1.7; 2.2.2; 2.2.4; 2.2.7; 2.2.8; 2.2.10; 2.2.11; 2.2.13</p>	
2.1.08	PRACTICE - 1		6
	<p>Acquaintance with school: talks with pedagogic personnel about experiences and organization of educational work; acquaintance with school documentation (schedule, regulations for pupils, forms of school reports, registrar), didactic material and equipment of classroom.</p> <p>Studying pupils' age and individual peculiarities, class pupils and their fulfilling pedagogic requirements put by the teacher.</p> <p>Diagnosing with the aim of revealing pupils' interests and abilities and making a plan of educational work for practice period.</p>	<p>Expected learning outcomes:</p> <ul style="list-style-type: none"> - to describe a form-master's and Mathematics teacher's functions and problems; - to assess study and school documentation; - to diagnose the level of a pupil's personal development and group development; - to realize self-analysis and self-assessment of one's activity results; - to plan lessons and out-of-classroom activities on Mathematics; - to analyze and project study content in methodological manuals. 	

		Assessment: 1. To design an outline and conduct an educational lesson. 2. To make psychological and pedagogical reference for a pupil and a group. Competences: 2.1.1; 2.1.7; 2.2.2; 2.2.4; 2.2.7; 2.2.8; 2.2.10; 2.2.11; 2.3.1; 2.3.2; 2.3.3	
2.1.09	PRACTICE 2 <p>Acquaintance with a subject teacher's activities, his/her teaching methods (observation and analysis of lessons, study of a subject teacher's thematic and lesson plans, plans of conducting optional lessons and extracurricular work on the subject). Developing plan-outline of a lesson and conducting testing lessons on a subject. Acquaintance with a class master's activities: study of class master's work plan; visiting educational events, class hours. Choosing the theme and gaining material for a diploma project.</p>		9
		Expected learning outcomes: - to plan, prognosticate basic components of teaching and educating; - to determine the correspondence of applied teaching methods and facilities to didactic objectives and tasks; - to apply various methods of organizing and realizing different kinds of pupils' activities; - to apply theoretical knowledge of teaching methods to practice; - to assess the results of pupils', teachers' and one's own activity. Assessment: 1. To develop an outline and conduct an extracurricular lesson on the subject. 2. To develop an outline and conduct a lesson on the subject. 3. To make analysis of an observed lesson and self-analysis of one's own lesson. 4. To analyze a subject teacher's working experience. Competences: 2.1.1; 2.1.7; 2.2.2; 2.2.4; 2.2.7; 2.2.8; 2.2.10; 2.2.11; 2.3.1; 2.3.3; 2.3.10.	
2.1.10	PRACTICE 3 <p>Developing and improving general pedagogical abilities and skills gained in the period of practices 1, 2.</p>		15
		Expected learning outcomes: - to apply theory and methods of teaching deliberately	

	<p>Working out and conducting lessons, teaching schoolchildren and assessing their academic progress, creating and applying visual aids, ICT media. Organizing and conducting extracurricular educational work with pupils: making plans-scenarios of extracurricular activities, determining forms and methods of work considering age-related features of a class, working with class active body, parents.</p> <p>Work on pupils' professional orientation.</p> <p>Applying the results of a pedagogical practice to writing a diploma research.</p>	<p>when projecting and conducting lessons on the subject and educational events;</p> <ul style="list-style-type: none"> - to plan organizing and carrying out pedagogical research based on information retrieval; - to assess conditions of effective application of modern information teaching facilities; - to analyze results of gaining, analyzing and processing experimental research in order to apply them to diploma thesis. <p>Assessment:</p> <ol style="list-style-type: none"> 1. To develop an outline and conduct an extracurricular lesson on the subject (optional lesson, study-group). 2. To develop outlines and conduct lesson on the subject of different types. 3. Working out methodological recommendations based on analysis of the results of research experiment. <p>Competences: 2.1.1; 2.1.5; 2.1.8; 2.2.1; 2.2.2; 2.2.3; 2.2.4; 2.2.5; 2.2.6; 2.2.7; 2.2.8; 2.2.10; 2.2.11; 2.2.12; 2.3.1; 2.3.2; 2.3.3; 2.3.10.</p>	
CED 2.2	Component of elective disciplines		-
MSD 3	Module of special disciplines		144
CRD 3.1	Component of required disciplines		81
3.1.01	ELEMENTARY MATHEMATICS		5
	<p>Arithmetics. Divisibility of integers. The greatest common divisor (GCD) and lowest common multiple (LCM). Combinatorial problems. Elementary functions. Graphing functions. Identical transformations of math expressions. Equations and inequalities containing a variable on modulo. Irrational equations and inequalities. Exponential equations and inequalities. Logarithmic equations and inequalities. Equations and inequalities with parameters. Systems of equations and</p>	<p>Expected learning outcomes:</p> <p>Knows and is able to apply key concepts and the complex of scientific knowledge on school course of mathematics;</p> <p>Is able to analyze various methods of solving school math and work through them in practice;</p> <p>Is able to apply the complex of abilities to independent decision-making in future professional work.</p> <p>Assessment:</p>	

	<p>inequalities and different methods of solving them. Proof of trigonometric identities and inequalities. Solving trigonometric equations and inequalities. Identical transformations of the expressions containing inverse trigonometric functions. Plane geometry. Basic geometric objects in the plane and their properties. Solid geometry. Basic geometric objects in space and their properties. Introduction to recreational Mathematics. Solving contest and Olympiad problems.</p>	<p>1) explaining connection between Elementary Mathematics and other disciplines under study at a higher education institution; 2) solving math problems using different methods and analyzing the results; 3) group presentation. Competences: 2.1.3, 2.1.5, 2.1.7, 2.2.9, 2.2.7, 2.2.8, 2.2.12, 2.3.3, 2.3.6</p>	
3.1.02	<p style="text-align: center;">ALGEBRA</p>		5
	<p>Sets. The direct product of sets. Binary relations. Theory of divisibility in the ring of integers. Greatest common divisor. Euclid algorithm. Prime numbers. Systematic numbers. Finite chain fractions. Comparisons in the ring of integers and their applications. Polynomials of a single variable. Division of a polynomial by the binomial $x - a$. Roots of a polynomial. Lowest common multiple. Expansion of a polynomial as powers of the binomial $x - a$. Irreducible multiple factors of a polynomial of a single variable. Polynomials of several variables. The ring of polynomials of several variables over a field. Third and fourth-order equations over the field of complex numbers. Polynomials over the field of rational numbers and algebraic numbers. The field of algebraic numbers. Matrices and determinants. Operations over matrices. Inverse matrix. Matrix rank. Properties of determinants. Minors and cofactors. Systems of linear equations. Matrix equations. Solving systems of linear equations using inverse matrix. Cramer's rule. Kronecker and Capelli's theorem. Gauss's method of solving systems of linear equations. Systems of homogeneous linear equations, conditions of existence of non-trivial solutions. Com-</p>	<p>Expected learning outcomes: <i>knows</i> theory of linear spaces, linear operators; basic algebraic structures of a group, a ring and a field, theory of quadratic and bilinear forms, theory of polynomials; <i>is able to</i> solve problems of number theory, group theory, ring and field theory; <i>is able to apply</i> math apparatus of Algebra and number theory; applies math apparatus of Algebra and number theory to solving specific problems; <i>knows</i> matrix, determinant theory and the theory of systems of linear equations; theory of vector algebra; theory of linear spaces; theory of linear operators; <i>is able to</i> solve problems concerned with matrix and determinant computation, with solving systems of linear equations; solve problems concerned with researching linear operators; <i>is able to apply</i> math apparatus of Algebra; has skills of applying math apparatus of Algebra to solving specific problems. Assessment: 1. Performing operations over sets, setting binary rela-</p>	

	<p>plex numbers. Vector spaces. Linear dependence and independence of vectors. Basis and rank of vector systems. Polynomials and their roots. Main theorem of Algebra. Quadratic forms. Sylvester's criteria. Linear and Euclid spaces. Isomorphism of all n-dimensional Euclid spaces. Linear operators and their matrix form. Canonic form of linear operators.</p>	<p>tions between sets.</p> <ol style="list-style-type: none"> 2. Applying Euclid algorithm, presenting numbers in the form of finite chain fractions. 3. Studying theory of polynomials of a single variable, solving problems on finding Greatest common divisor and Lowest common multiple, on expanding a polynomial. 4. Studying theory of polynomials of several variables, solving third- and fourth-order equations. 5. Performing operations over matrices, finding in verse matrices, computing a matrix rank. Computing determinants and ability to apply their properties. 6. Solving systems of linear equations using Cramer's, Gauss's, matrix methods. 7. Performing operations over complex numbers, operating concepts of vector space, finding polynomial roots, studying the theory of linear operators. <p>Competences: 2.1.2, 2.1.3, 2.1.8, 2.2.8, 2.2.10, 2.2.12, 2.3.4, 2.3.5, 2.3.6</p>	
3.1.03	<p style="text-align: center;">GEOMETRY</p>		12
	<p>Vectors: addition and multiplication by a number; linear dependence of vectors; basis and coordinates; scalar multiplication of vectors; orientation; vector and compositional products of vectors. A straight line and a plane: coordinate systems; passing from one coordinate system to another one; equation of a straight line in the plane and of a plane in space; positional relationship of straight lines in the plane and of planes in space; a straight line in space. Second order lines: quadratic functions in the plane and their matrices; orthogonal matrices and transformations of Cartesian coordinates; reduction of second order line equation to canonic form; ellipse, hyperbolas and parabolas and their prop-</p>	<p>Expected learning outcomes:</p> <p>Knows basic concepts of analytical geometry in the plane and in space;</p> <p>Is able to solve problems of analytical geometry in the plane and in space, to apply math apparatus when studying real processes and phenomena;</p> <p>Applies the apparatus of analytical geometry to solving specific problems.</p> <p>Assessment:</p> <ol style="list-style-type: none"> 1. Analysis of studied methods of solving different problems of analytical geometry. 2. Identification of mutual positioning of geometrical configurations in the plane and in space. 	

	<p>erties. Principal directions, asymptotic directions, diameters. Affine transformations: definition and properties of affine transformations. Second order surfaces: the theorem of canonic equations of second order surfaces; ellipsoids; hyperboloids; paraboloids; cylinders; canonical cuts; rectilinear generators of second order surfaces; surfaces of revolution.</p> <p><i>Lines in Euclidian space.</i> Vector-function of a scalar argument. Limit of a vector-function at a point. Continuous vector-functions and their properties. Differentiability of a vector-function, differentiation rules. Vector-functions of constant length or constant direction. Concept of a curve. Tangent line and normal of a smooth curve, their equations. Arc length of a curve. Curve curvature and spinning. Geometric sense of curvature and spinning. Natural equations of a curve. Theorems of an osculating plane. Moving trihedral of a curve. Serret-Frenet formulas. Frenet frame, its coordinate axes and planes, their equations.</p> <p><i>Surfaces in Euclidian space.</i> Surface and its tangent lines. Tangent plane to a surface. Normal. First quadratic form of a surface. Curve length on a surface, the angle between curves on a surface. Area of a surface. Curve curvature on a surface. Normal curvature. Second quadratic form of a surface. Indicatrix of curvature. Principle curvatures. Total and average surface curvatures. Surfaces of constant curvature. Intrinsic geometry of a surface. Surface hogging. Geodesic curvature and geodesic lines on a surface. Elements of topology. Topological spaces, topological manifolds.</p>	<p>3. Reduction of equations of curves and surfaces to a canonic form.</p> <p>Competences: 2.1.2, 2.1.3, 2.1.8, 2.2.8, 2.2.10, 2.2.12, 2.3.4, 2.3.5, 2.3.6</p>	
3.1.04	MATH ANALYSIS		18
	Real numbers. Numerical sequence. Limit of a sequence and its properties. Functions. Limit, continuity	<p>Expected learning outcomes:</p> <p>knows the theory of real numbers, basic methods of</p>	

	<p>of a function at a point. Derivative and differential of a function of one variable: geometrical and mechanical meaning. Derivatives and differentials of a sum, difference, product and quotient. Derivatives of basic elementary functions. Higher order derivatives and differentials. Derivatives of inverse, compound, parametrically defined functions. Investigating functions using derivatives (monotony, extremes, concavity and inflection points, asymptotes). Primitive. Indefinite integrals. Integration by parts and by substitution. Integration of rational fractions, irrational and trigonometric functions. Definite integral. Newton and Leibniz's formula. Methods of integrating definite integrals (integration by substitution, integration by parts). Functions of several variables. Limit, continuity, partial derivatives and partial differentials. Differentiability of functions. Directional derivatives. Taylor's formula. Extreme of a function of several variables. Implicit functions. Number series. Convergence tests for positive series: comparison test, Cauchy's, D'Alembert's tests. Functional sequences and series. Even convergence. Power series. Weyerstrasse's test. Fourier trigonometric series.</p>	<p>computing function limits, formulae and methods of differentiation of functions of one variable; ability to investigate variables, compute limits, differentiate functions of one variable; applies acquired knowledge to independent problem solution; is able to analyze obtained results when solving applied problems; knows basic concepts of the theory of integrating functions of one variable, basic formulae and methods of integrating functions; is able to construct graphs, integrate rational, irrational, trigonometric, transcendent functions. applies integrals to solving geometrical and physical problems; knows methods of computing limits of functions of several variables, formulae and methods of differentiating functions of several variables, methods of investigating number and functional series; is able to compute limits, differentiate functions of several variables, to test series for convergence; applies acquired knowledge to independent problem solving; is able to analyze obtained results.</p> <p>Assessment:</p> <ol style="list-style-type: none"> 1. Solving problems on defining the function domain, computing function limits, derivatives of compound, parametrical functions. 2. Applying studied theoretical material to investigating functions and graphing them. 3. Solving non-standard problems using derivatives. 4. Ability to apply methods of integrating rational, irrational, trigonometric, transcendent functions. 	
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		<p>5. Solving geometrical and physical problems using definite integral.</p> <p>6. Solving problems on defining domains of functions of several variables, limits of functions of two variables, computing partial derivatives and differentials, directional derivatives, investigating functions of two and three variables.</p> <p>7. Testing number, functional series for convergence, ability to expand given functions as Taylor and Fourier series.</p> <p>Competences: 2.1.1, 2.1.3, 2.1.5, 2.1.7, 2.1.8, 2.2.8, 2.2.12, 2.3.2, 2.3.4</p>	
3.1.05	<p style="text-align: center;">DIFFERENTIAL EQUATIONS</p> <p>Concept of differential equation. Slope field, integral curves. First order equations: equations with separation of variables, homogeneous equations, equations in full differentials, linear equations, Bernoulli's equation, the method of entering a parameter, Lagrange's and Clairaut's equations. Cauchy's problem: theorem of existence and uniqueness of solutions. Higher order differential equations: equations integrable in quadratures, and equations whose order can be lowered. n-th order linear differential equations. Fundamental system of solutions. Heterogeneous linear equations, the structure of a general solution. Linear differential homogeneous and heterogeneous equations with constant coefficients; the method of indefinite quotients and the method of constants variation. Systems of differential equations. Systems of linear differential equations with constant coefficients. First order equations with partial derivatives.</p>		6
		<p>Expected learning outcomes:</p> <p>At the end of the course students should:</p> <ul style="list-style-type: none"> understand basic concepts of the theory of differential equations and systems; apply classification of types of differential equations to choosing the method of solving them; explain the sequence of operations for solving a specific problem using the chosen method; analyze obtained results when solving differential equations and systems; apply the complex of abilities to independent solving of math problems, described by differential equations. <p>Assessment:</p> <ol style="list-style-type: none"> 1. Solving differential equations of each type, analysis of methods and results of solution. 2. Constructing math model of a physical or geometrical problem, described by a differential equation, choosing an appropriate method of solving it, finding the solution, analyzing the result. 3. Analysis of considered methods of solving different 	

		types differential equations and systems of equations, and systemizing them for rational application to each specific problem. Competences: 2.1.2, 2.1.3, 2.1.7, 2.1.9, 2.2.8, 2.2.10, 2.2.12, 2.3.3, 2.3.4, 2.3.5, 2.3.6	
3.1.06	PROBABILITY THEORY AND MATH STATISTICS		6
	Basic concepts of Probability theory. Event and probability. Axioms of Probability theory. Probability spaces. Elements of combinatory analysis. Properties of probability. Conditional probability and its properties. Formula of composite probability. Bayes's formula. Independence of two and n events. Sequential trials. Independent trials. Bernoulli's scheme. Binomial distribution. Law of averages for Bernoulli's scheme. Moivre and Laplace's local and integral theorems. Markov's chain. Random variables and their characteristics. Math expectation of random variables and its properties. Dispersion of random variable and its properties. Mean-square deviation. Chebyshev's inequality. Chebyshev's theorem. Bernoulli's theorem. Concept of central limit theorem. Fundamental problems of Math Statistics. Methods of finding parameter evaluations. Constructing approximate confidence intervals.	Expected learning outcomes: knows basic terms and concepts of probability theory and math statistics (random variable, distribution type, number characteristics); principles of computing probabilities of random events and evaluations of parameters of a universal set; can construct and solve various probability problems; applies studied random variables distribution laws to practical problems; applies methods of processing statistical data using modern computer technology. Assessment: 1. having the necessary knowledge for solving problems on probability theory and math statistics. 2. analysis of the results of solving problems on probability theory and math statistics, arising from comparing initial statistical data. Competences: 2.1.2, 2.1.3, 2.1.8, 2.2.8, 2.2.10, 2.2.12, 2.3.4, 2.3.5, 2.3.6	
3.1.07	METHODS OF TEACHING MATHEMATICS		10
	General problems of student methodical training. Basic problems and objectives of methods of teaching mathematics. Components of school mathematics course content. System of teaching principles. Methods, facilities and forms of teaching mathematics. Organizing the process of teaching mathematics. Specifics of teaching the dis-	Expected learning outcomes: knows and can apply key concepts and a complex of scientific knowledge on methods of teaching mathematics; can prepare lesson plans, apply innovative technology, solve standard and non-standard math problems; is able to bring modern information on fundamental and	

	<p>cipline. Application of innovative technology to mathematics lessons. Psycho-pedagogical fundamentals of teaching mathematics. Math concepts, statements and methods of studying them. Methods of teaching mathematics through problem solving. Organizing self-study when teaching mathematics to pupils. Extracurricular mathematics lessons. Out-of-classroom work on mathematics. Specifics of teaching mathematics at different types of schools. Particular problems of methodical training of a future mathematics teacher.</p>	<p>school mathematics together for independent application of theoretical and methodological knowledge to teaching mathematics.</p> <p>Assessment:</p> <ol style="list-style-type: none"> 1. critical analysis and forecasting innovative technological solutions in the sphere methodological support. 2. solving mathematical problems, methodological reasoning, analysis of results. 3. performing creative individual and group tasks, and applying acquired knowledge to practice. <p>Competences: 2.1.5, 2.1.7, 2.2.1, 2.2.3, 2.2.5, 2.2.6, 2.2.7, 2.2.8, 2.2.9, 2.2.10, 2.2.11, 2.2.12, 2.2.13, 2.3.1, 2.3.2, 2.3.3, 2.3.4, 2.3.5, 2.3.6, 2.3.7, 2.3.8</p>	
3.1.08	<p>METHODOLOGICAL FUNDAMENTALS OF SOLVING MATH PROBLEMS</p>		6
	<p>Priority trends of Mathematics and solving math problems. The newest developments in this sphere. History of foreign and domestic methods of solving math problems and their basic characteristics.</p> <p>Classification of math problems, methods of solving them and necessary accounting principles when solving math problems. Standard problems. Nonstandard problems. Competitive problems. Olympiad problems. Recreational problems.</p> <p>Electronic resources of making math computations, including global networks.</p>	<p>Expected learning outcomes:</p> <p>knows priority trends of Mathematics and methods of solving math problems, classification of math problems, methods of solving them;</p> <p>can to apply theoretical knowledge to solving practical problems, make up models of problems solutions; analyze solutions, schematically present structure of problem solution;</p> <p>having the complex of abilities to independent solving of math problems.</p> <p>Assessment:</p> <ol style="list-style-type: none"> 1. solving math problems using different methods and analyzing the results; 2. performing creative individual and group tasks. <p>Competences: 2.1.3, 2.1.5, 2.1.7, 2.2.9, 2.2.7, 2.2.8, 2.2.12, 2.3.3, 2.3.6</p>	
3.1.09	<p>TECHNOLOGY ASSESSMENT CRITERIA</p>		3
	<p>Modern methods of assessment of learning outcomes. The place and role of assessment in the educational process.</p>	<p>Expected results</p> <p>- to know the modern condition of methods and means of</p>	

	<p>Problems of assessment activity.</p> <p>The model of the technology of criteria assessment. Principles of assessment. Criteria tables – subject authorities. Formative assessment and summative (internal and external) assessment.</p> <p>Moderation of the results of summative assessment.</p> <p>Age-related criteria of assessment of learning outcomes. Self-assessment and mutual assessment.</p> <p>Pedagogical problems of portfolio. Functions and structure of portfolio.</p>	<p>diagnosing students' achievements;</p> <ul style="list-style-type: none"> - to describe the content of a teacher's work on assessing students' learning outcomes; - to determine optimal technologies of assessing the results planned, taking into account the requirements of normative documents and objects of control; - to apply the instruments of assessment, which are consistent with the objectives and content of education; - to use criteria assessment for making decisions concerning further education; - to plan learning outcomes, to develop and apply subject authorities to independent assessment of students; - to apply modern ICT facilities to organizing assessment of learning outcomes. <p>Assessment</p> <ul style="list-style-type: none"> - to complete the development of the criteria table, with detailed description of the level of students' achievement so each criterion and the number of points corresponding to it; - to prepare a report on students' achievements within a certain period of time, containing a set of skills developed. <p>Competences</p> <p>2.1.1; 2.1.5; 2.2.2; 2.2.4; 2.2.5; 2.2.6; 2.2.7; 2.2.12; 2.3.1; 2.3.2; 2.3.3; 2.3.5; 2.3.7; 2.3.10.</p>	
3.1.10	PROFESSION-ORIENTED FOREIGN LANGUAGE		3
	<p>Introduction to subject-related sphere of the specialty in foreign profession-oriented language:</p> <p>Mathematics as a subject and science. Basic concepts and terms of Mathematics. Specifics of conducting a Mathematics lesson in Eng-</p>	<p>Expected outcomes</p> <ul style="list-style-type: none"> - apply conceptions, lexical units and terminology of special English, its grammar and stylistics; - to be able to speak on general and professional subjects, to understand oral and written speech, to translate profession-related texts from Russian (Kazakh) into English and vice versa, 	

	<p>lish.</p> <p>Business (profession-oriented) English language as a disciplinary phenomenon serving for certain sphere of human activity: Planning career. Getting a job. Communication at work. Object of professional activity. Scientific pedagogical activity as professional activity. Project as a product of professional activity.</p> <p>Fundamentals of acquiring subject-related linguistic material: Specifics of subject-related linguistic material. Categories and concepts of profession-oriented English. Professional terminology.</p> <p>Special profession-oriented material: Selection of texts on subjects. Application of material to professional situations (at math lesson). The content of the subject of Mathematics in English.</p> <p>Professional competence: Analysis of texts in the English language. Preparing and writing an essay on a professional topic.</p> <p>Relation of the profession-oriented foreign language to other disciplines: Relation of profession-oriented foreign language to Mathematics. Relation of profession-oriented foreign language to Pedagogy. Specifics of teaching Mathematics in foreign language at school.</p>	<p>to work at special literature in the English language;</p> <ul style="list-style-type: none"> - to apply the knowledge of the English language at a lesson, at work, to apply concepts acquired to new situations; - to be able to separate material as components in order to understand its organizational structure, to differ facts from suppositions; to analyze methods of teaching Mathematics in English with the aim of improving them for achieving best learning outcomes; - to build a structure or a model using different elements, to combine components for integrating, focusing on creating a new model or structure; <p>Assessment</p> <ol style="list-style-type: none"> 1. To translate profession-related texts from Russian (Kazakh) into English and vice versa, to work at special literature in the English language. 2. To apply the material studied. <p>Competences:</p> <p>2.1.1, 2.1.3, 2.1.5, 2.1.7, 2.1.8, 2.2.8, 2.2.12, 2.3.2, 2.3.3</p>	
EDC 3.2	Elective disciplines component		63
	Diploma thesis		12
	Total ECTS		240

3.4 Elective disciplines recommended

№	Modules and disciplines	ECTS
	Special disciplines module	69
3.4.1	Scientific fundamentals of school course of Mathematics Elementary Mathematics	5
3. 4.2	History of Mathematics Practicum on solving Math problems – 1	6

3. 4.3	Numerical systems Additional chapters of Algebra	5
3. 4.4	Projective Geometry Constructive Geometry Reflections and conversions	6
3. 4.5	Complex analysis Analytical functions	6
3. 4.6	Theory of function of real variable Theory of functions and functional analysis	6
3. 4.7	Math Logics and Discrete Mathematics Math Logics	5
3. 4.8	Equations in partial derivatives Equations of Math Physics	6
3. 4.9	Incorrect problems of math Physics and analysis Inverse problems of Math Physics Integral equations	5
3. 4.10	Functional analysis Functional spaces Theory of operators	5
3. 4.11	Numerical methods Difference schemes Math modeling	3
3. 4.12	Calculus mathematics Optimization methods and variation calculus	4
3. 4.13	Finance Mathematics Math models in Economics	2
3. 4.14	Physics Physical practicum	3