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ONTÚSTIK-QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ

SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»

Department «Medical Biophysics and Information Technology»
Discipline work program (Syllabus)
Educational program 6B07201-«Pharmaceutical manufacturing technology»

1.	**General information about the Course**		
1.1	Course code: ICT 1105	1.6	Academic year: 2023-2024
1.2	Course name: Information and communication technology	1.7	Year: 2
1.3	Prerequisites: -Physics	1.8	Term: 4
1.4	Post-requisites: Computer - engineering graphics in design	1.9	Number of credits (ECTS): 5
1.5	Cycle: general education discipline	1.10	Component: main component
2.	**Course description**		
	An ICT role in key sectors of development of society. Introduction to computer systems. Software. Operating systems. Human-computer interaction. Database systems. Data analysis. Data management. Networks and telecommunications. Cybersecurity. Internet technology. Cloud, mobile technology. Multimedia, SMART technology. E-technology. Information technology in the professional sphere. Industrial ICT. Prospects of development of ICT.		
3.	**Summative assessment form**		
3.1	Testing ✅	3.5	Coursework
3.2	Writing	3.6	Essay
3.3	Oral	3.7	Project
3.4	OSPE / OSCE or Practical Skills Acceptance	3.8	Other (specify)
4.	**Discipline objectives**		
	The purpose of the discipline		
	Formation of students ' competence systems in the use of information and communication technologies in practical and scientific activities		
5.	**Learning outcomes (Course learning outcomes)**		
CLO1	Demonstrates knowledge and understanding of terms related to information and communication technologies		
CLO2	Selects and classifies the main and additional computer devices selects software		
CLO3	Applies methods and knowledge in the field of information and communication technologies in medical practice, uses Internet resources, cloud and mobile services for the search, storage, processing, protection and dissemination of information		
CLO4	Uses various types of information and communication technologies in personal activities: communication skills, the ability to communicate information, problems and their solution, special software for processing medical data		

5. 1	Course learning outcomes	The learning outcomes of the EP, which are related to the learning outcomes of the course
	CLO 1	CLO 1 Understanding of current trends and prospects for the development of the pharmaceutical industry and legal aspects of the organization of the production of pharmaceutical and medical product
	CLO 2 CLO 3 CLO 4	CLO 7 Conducting development work on the expansion and modernization of production, on the introduction of innovative technologies, on the improvement of equipment, automation equipment and instrumentation to monitor process parameters

6.	**Details of the course**				
6.1	Venue (building, auditorium): South Kazakhstan Medical Academy, main building, Department of Medical Biophysics and Information Technologies. Al-Farabi Square-1, 5th floor, auditorium No. 500-511. Telephone 39-57-57, add. 1063.				

6.2	Number of hours	Lecture	Prac. lessons	Lab.lessons	SIW	SIWT
		10	40	-	70	30

7.	**Information about teachers**				
№	**Full name**	**Degrees and title**	**Email address**	**Scientific interests, etc.**	**Achievements**
1.	Ivanova	PhD, Professor	marina-	Theory of differential	Author of over 50 scientific

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	Marina Borisovna		iv@mail.ru	equations. Medical data processing with STATISTICA, SPSS.	publications, one monograph, 6 teaching aids, an electronic textbook "Biostatistics", an electronic dictionary "ICT".
2.	Berdiyeva Meruyert Aimambetovna	PhD	meruert_berdi eva @mail.ru	Innovative teaching methods	Author of over 30 scientific and methodical articles, 1 book, 11 methodical instructions.
3	Abdrimova Zakhira Maratovna	Master'sdegree Senior teacher	zakira75@ma il.ru	Using statistical analysis software STATISTICS for medical data processing	Author of the textbook "Collection of reports from biostatistics" in the Kazakh language. "ICT". Author of several scientific articles.
4	Maulenova Akmaral Aitbekovna	Master'sdegree Senior teacher	maral_tasken @mail.ru	Innovative teaching methods	Author of over 10 scientific and methodical articles, 1 book, 3 methodical instructions.

8. Thematic plan

Week/ Day	Topic name	Summary	Course learning outcomes	Number of hours	Forms / methods / learning technologies	Forms / assessment methods
1	LECTURE. An ICT role in key sectors of development of society. Standards in the field of ICT. Introduction to computer systems. Architecture of computer systems	Definition of ICT. Subject ICT and its purposes. An ICT role in key sectors of development of society. Communication between ICT and achievement of the objectives of a sustainable development in the Millennium Declaration. Standards in the field of ICT.Review of computer systems. Evolution of computer systems. Architecture and components of computer systems. Use of computer systems. Data representation in computer systems.	CLO1	1	Lecture information	Feedback (quick survey)
	PRACTICAL LESSON. Calculation of metrics of productivity of computer system: speed, efficiency, energy costs, Amdahl's law, CPU time.	Computer lab rules. Architecture and components of computer systems. Use of computer systems. Data representation in computer systems.Computer system: speed, efficiency, energy costs, Amdahl's law, CPU time.	CLO2 CLO3	3	seminar individual task	oral survey Solve problems
	SIWT Consultation on the implementation of an individual task 1 SIW.Development of flowcharts of operation of devices of the computer. Stage 1.	Consultation on the implementation of an individual task 1	CLO3 CLO4	2/5	individual task 1	Logical flowcharts
2	LECTURE. Software.	Software. Types of the software,	CLO1	1	Lecture	Feedback

	Operating systems. Human-computer interaction.	purpose and characteristic. Basic concepts of OS. Evolution of operating systems. Classification of operating systems, including for mobile devices. Classification of desktop applications. User interface as means of human-computer interaction.			information	(quick survey)
	PRACTICAL LESSON.Determination of requirements to development "convenient in application" the website.	Working with programmer Mobirise.	CLO1 CLO2 CLO3	3	practicum individual task	oral survey practical work
	SIWT Consultation on the implementation of an individual task 3 SIW. Collecting, the analysis and structurization of data in the professional environment (development of the database in the MS Access). Stage 1.	Creation of databases in MS Access for application in professional sphere	CLO3 CLO4	2/5	individual task 2	compiling the glossary
3	PRACTICAL LESSON. Determination of requirements to development "convenient in application" the website.	Working with programmer Mobirise.	CLO2 CLO3	2	computer based teaching	individual task, oral survey
	SIWT Consultation on the implementation of an individual task 3 SIW. Collecting, the analysis and structurization of data in the professional environment (development of the database in the MS Access). Stage 1.	Creation of databases in MS Access for application in professional sphere	CLO1 CLO4	2/4	individual task 3	creating database
4	LECTURE. Database systems	Bases of database systems: concept, characteristic, architecture. Data models. Normalization. Integrity constraint on data. Query tuning and their processing. Fundamentals of SQL. Parallel processing of data and their restoration. Design and development of databases. Technology of programming of ORM. The distributed, parallel and heterogeneous databases.	CLO1	1	Lecture-information	Feedback (quick survey)
	PRACTICAL LESSON. Development of database structure, creation of tables and requests. Working with a MySQL relational database. MySQL database	The database management system: definitions and functions, basic architectural solutions. The date model of DB. Creating medical database: tables, queries. Working with Forms and Reports.	CLO2	3	computer based teaching	oral survey creation of tables and requests.

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	administration using php My Admin. Working with a single-table database.					
	SIWT Consultation on the implementation of an individual task 4 SIW. Collecting, the analysis and structurization of data in the professional environment (development of the database in the MS Access). Stage 2.	Creation of databases in MS Access for application in professional sphere	CLO3 CLO4	2/4	individual task 4	for preparation crossword
5	LECTURE. Data analysis. Data management	Data analysis bases. Methods of collection, classification and prediction. Decision trees. Processing of large volumes of data. Methods and stages of Data mining. Tasks Data mining. Visualization of data.	CLO1	1	Lecture information	Feedback (quick survey)
	PRACTICAL LESSON. Design and creation of the presentations of lecture material, scientific reports, etc.	Creating of presentations, entering text on a slide. Adding of pictures and clip art. MS PowerPoint: adding of hyperlinks, animations and sound effects	CLO2	3	computer based teaching	individual task spreadsheets, oral survey
	SIWT Consultation on the implementation of an individual task 5 SIW. Description of network topology of the office building. Stage 1.	Software, hardware of networks using in the office building	CLO3 CLO4	2/4	individual task 5	creating presentation
6	PRACTICAL LESSON. Processing of numerical information, editing formulas and creation of charts in spreadsheet editors.	The database management system: definitions and functions, basic architectural solutions. The date model of DB. Creating medical database: tables, queries. Working with Forms and Reports.	CLO2 CLO3	2	computer based teaching	individual task, oral survey
	SIWT Consultation on the implementation of an individual task 6 SIW. Description of network topology of the office building. Stage 2.	Software, hardware of networks using in the office building	CLO4	2/4	individual task 6	creating of MCQs
7	LECTURE. Networks and telecommunications	End devices, data transfer devices, transmission medium. Types of networks. Stack protocols: TCP/IP, OSI. IP addressing. Local and wide area networks. Wire and wireless network technologies. DHCP protocol. Technologies of connection to the Internet. Telecommunication technologies.	CLO1	1	Lecture information	Feedback (quick survey)
	PRACTICAL LESSON. Creation of a simple network configuration. IP	Networks and telecommunications. Classification of networks. Types of topologies. Types of servers.	CLO2 CLO3	3	Work in pairs, partial search	individual task, oral

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	addressing. Monitoring of a network. Analysis of traffic. Use of sniffers for the analysis of network packets.					survey
	SIW. Midterm control 1 accepting SIWT. Preparation for the midterm control1		CLO1	2/4	-	Testing MCQ
8	LECTURE. Cybersecurity	Security risks of information and their classification. Industry of cybersecurity. Cybersecurity and control of the Internet. Malicious applications. Measures and means of information protection. Standards and specifications in information security field. The acts of the Republic of Kazakhstan governing legal relations in the sphere of information security. Electronic digital signature. Encryption.	CLO1	1	Lecture information	Feedback (quick survey)
	PRACTICAL LESSON. Use of hardware and software for key generation. Application of the EDS and encoding in case of message exchange by E-mail. Settings of the Firewall program element of the computer network for network traffic monitoring and filtering. Working with the various antivirus programs.	Security risks of information and their classification. Measures and means of information protection. Antivirus software. Archiving utility.	CLO3	3	Work in pairs, computer based teaching	individual task, oral survey
	SIWT Consultation on the implementation of an individual task 8 SIW. Comparative analysis of antivirus means of information protection. Stage 1,2.	Development of presentation and web site with information base about anti-virus programs	CLO3 CLO4	2/4	individual task 8	compiling the glossary for preparation cross-sword
9	PRACTICAL LESSON. Data acquisition from the server. Working with WordPress and Joomla web content management systems.	Development a website design using Photoshop multifunctional graphic editor and CSS style sheet language	CLO2 CLO3	2	work in pairs, tasks	individual task, oral survey
	SIWT Consultation on the implementation of an individual task 9 SIW. Information search in a specialty profile on the Internet, use of cloud	Information search in a specialty profile on the Internet, use of cloud services for storage and data processing.	CLO4	2/3	individual task 9	Logical circuits on this topic

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	services for storage and data processing. Stage 1					
10	LECTURE. Internet technology. Cloud and mobile technology	Basic Internet concepts. The Uniform Resource Identifier (URI), its assignment and components. DNS service. Web technologies: HTTP, DHTML, CSS, and JavaScript. E-mail. Message format. SMTP, POP3, IMAP protocols. Data centers.Tendencies of development of the modern infrastructure decisions. Principles of cloud computing. Technologies of virtualization. Web service in the Cloud. Main terms and concepts of mobile technologies. Mobile services. Standards of mobile technologies Introduction to Google Docs and Microsoft Office Web Apps cloud services. Creation accounts to work with cloud services. Study of operation modes associated with file storage, sharing and processing. Use of mobile technologies for receiving an information access. GPS navigators. GSM a signalling.	CLO1	1	Lecture information	Feedback (quick survey)
	PRACTICAL LESSON. Introduction to Google Docs and Microsoft Office Web Apps cloud services. Creation accounts to work with cloud services. Study of operation modes associated with file storage, sharing and processing. Use of mobile technologies for receiving an information access. GPS navigators. GSM a signaling.	Internet technologies. History of the Internet development. Basic Internet concepts. Cloud technologies. Efficiency of cloud technologies application. Working with mobile applications. Internet technologies. History of the Internet development. Basic Internet concepts. Cloud technologies. Efficiency of cloud technologies application. Working with mobile applications.	CLO3	3	Computer based teaching	individual task, oral survey
	SIWT Consultation on the implementation of an individual task 10 SIW. Information search in a specialty profile on the Internet, use of cloud services for storage and data processing. Stage 2	Information search in a specialty profile on the Internet, use of cloud services for storage and data processing.	CLO3 CLO4	2/3	individual task 10	compiling the glossary preparation crossword
11	LECTURE. Multimedia technology. Smart technology	Representation text, audio, video and graphical information in a digital format. Basic technologies for compression of information.	CLO1	1	Lecture information	Feedback (quick survey)

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		3-D representations of the virtual world and animation. Instruments of development of multimedia applications. Use of multimedia technologies for planning, descriptions of business processes and their visualization.				
	PRACTICAL LESSON. Creation of video files with use of programs: Hyper Cam, Adobe Premiere Pro, Windows Movie Maker, etc.	Creating of video files by means of Windows Movie Maker. Use of multimedia technologies for planning, descriptions of business processes and their visualization.	CLO2	3	computer based teaching	creating of video
	SIWT Consultation on the implementation of an individual task 11 SIW. Creation of an emblem, the video and other materials on a specialty profile means of multimedia technologies. Stage 1.	Creation of an emblem, the video and other materials on a specialty profile means of multimedia technologies.	CLO3 CLO4	2/3	individual task 11	creating of video, preparation crossword
12	Operation with Smart-applications: Smart TV, Smart Hub, etc.	Creation project skills by working with Google Slides.	CLO2 CLO3	2	computer based teaching	individual task, creating slides
	SIWT Consultation on the implementation of an individual task 12 SIW. Creation of an emblem, the video and other materials on a specialty profile means of multimedia technologies. Stage 2.	Creation of an emblem, the video and other materials on a specialty profile means of multimedia technologies.	CLO3 CLO4	2/3	individual task 12	creating of an emblem, compiling the glossary
13	LECTURE. E-technology. Electronic business. Electronic training. Electronic government	Electronic business: Main models of electronic business. Information infrastructure of electronic business. Legal regulation in electronic business. Electronic training: architecture, structure and platforms. Electronic textbooks. Electronic government: concept, architecture, services. Formats of implementation of the electronic government in developed countries.	CLO1	1	Lecture information	Feedback (quick survey)
	PRACTICAL LESSON. Operation with services on the website of the electronic government http://egov.kz/cms/ru/government-service	Electronic government: concept, architecture, services. Formats of implementation of the electronic government in developed countries. "Infrastructure of e-government. E-services in the Healthcare."	CLO3	3	computer based teaching	individual task, oral survey

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	s/for_citizen: registration of requests, obtaining counterparts of documents, etc.					
	SIWT Consultation on the implementation of an individual task 13 SIW. Presentation and protection of the main results of design activity in the specialty. Stage 1,2.	Presentation and protection of the main results of design activity in the specialty.	CLO3 CLO4	2/3	individual task 13	development of graphic objects on medicine
14	LECTURE. Information technologies in the professional sphere. Industrial ICT. Prospects of development of ICT	The software for the solution of tasks of the specialized professional sphere. Modern IT trends in the professional sphere: medicine, power, etc. Use of search engines and electronic resources in the professional purposes. Safety issues in industrial information and communication technologies. Prospects of development in the sphere of the IT market: development of the free software. Forming of an ecosystem of IT of entrepreneurship and support small startup of the companies. Programs of acceleration and incubation. Development of necessary infrastructure of electronic payments and logistics. Prospects of development of E-technologies	CLO1	1	Lecture information	Feedback (quick survey)
	PRACTICAL LESSON. Development of structure and the maintenance of a lesson in the environment of remote learning: Moodle, eDX, etc.	Development of structure and the maintenance of a lesson in the environment of remote learning: Moodle, eDX, etc.	CLO2	3	computer based teaching	individual task, oral survey
	SIW. Midterm control 2 accepting SIWT. Preparation for the midterm control 2		CLO1	2/3		Testing MCQ
15	PRACTICAL LESSON. Installation and use of application programs in the professional sphere. Working in the Matlab environment for scientific and technical computing. Working with the Matlab toolboxes for applied problem solving.	Installation and use of application programs in the professional sphere. Introduction to STATISTICA 10. Setting documents appearance and working with charts in STATISTICA 10.	CLO2 CLO3	2	computer based teaching,	individual task, oral survey
	SIWT Consultation on the implementation of an	Feedback from students about the results of learning outcomes.	CLO3 CLO4	2/3	individual task 15	creating of MCQ

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individual task 15. SIW. Defense of the independent study of students.					
Exam preparation and conducting			15		

9.	**Training Methods and Control Forms**	
9.1	lectures	Lecture information (feedback quick survey)
9.2	Practical lessons	Practical work, oral survey, solve problems
9.3	SIW / SIWT	individual task logical flowchart screen recording video, project, presentation
9.4	Mid-term examination	Testing (MCQ)
10.	**Evaluation criteria**	
10.1.	**Criteria for evaluating the learning outcomes of a subject**	

№ LO	Name of learning outcomes	Dissatisfying	Satisfying	Good	Excellent
LO 1	Demonstrates knowledge and perception terms related to information and communication technologies, communication skills, suitable for an effective data exchange.	1) Partly acquired basic terms of ICT; 2) Partly knows the role of ICT in key aspects of developed society; 3) Does not define the characteristics of modern personal computer; 4) Does not orient in information recycle, important in solving tasks (massive informa-tion tools, databa-ses, information and communication systems, Internet dictionaries, glossa-ries encyclopedia and etc.); 5) Does not know about following safety requirements and hygiene during the work with computers.	1) Acquired basic terms of ICT; 2) Partly knows the role of ICT in key aspects of developed society; 3) Partly defines the characteristics of modern personal computer; 4) Partly orients in information recycle, important in solving tasks (massive informa-tion tools, databa-ses, information and communication systems, Internet dictionaries, glossa-ries encyclopedia and etc.); 5) Partly knows about following safety requirements and hygiene during the work with computers.	1) Acquired basic terms of ICT; 2) Partly knows the principles and the role of ICT in the key aspects of developed society; 3) Defines the characteristics of modern personal computer; 4) Orients in information recycle, important in solving tasks (massive informa-tion tools, databa-ses, information and communication systems, Internet dictionaries, glossa-ries encyclopedia and etc.); 5) Partly knows about following safety requirements and hygiene during the work with computers.	1) Acquired basic and extended terms of ICT; 2)Knows the main principles and the role of ICT in the key aspects of developed society; 3) Defines the characteristics of modern personal computer; 4) Orients in information recycle, important in solving tasks (massive informa-tion tools, databa-ses, information and communication systems, Internet dictionaries, glossa-ries encyclopedia and etc.); 5) Knows about following safety requirements and hygiene during the work with computer
LO 2	Selects and classifies basic extra additional devices and software	1) Poorly classifies the functional circuits of the computer and their devices; 2) Finds difficult to compare the sizes of files of different formats that store	1) Partly classifies the functional circuits of the computer and their devices; 2) Partly compares the sizes of files of different formats that store the same	1) Can classify the functional circuits of the computer and their devices; 2) Can compare the sizes of files of different formats that store the same information	1) classifies the functional circuits of the computer and their devices; 2) Can compare the sizes of files of different formats that store the same information

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		the same information 3) Poorly evaluates information, including information received from the media; does not know how to distinguish correct argumentation from incorrect; 4) classifies computer networks and explains the advantages of wireless communication 5) selects various data formats for solving problems in spreadsheet	information 3) Poorly evaluates information, including information received from the media; does not know how to distinguish correct argumentation from incorrect; 4) classifies computer networks and explains the advantages of wireless communication 5) selects various data formats for solving problems in spreadsheets	3) Evaluates information, including information received from the media; does not know how to distinguish correct argumentation from incorrect; 4) classifies computer networks and explains the advantages of wireless communication 5) selects various data formats for solving problems in spreadsheets	3) Evaluates information, including information received from the media; does not know how to distinguish correct argumentation from incorrect; 4) classifies computer networks and explains the advantages of wireless communication 5) selects various data formats for solving problems in spreadsheets
LO 3	Applies methods and information and communication technology awareness on medical practice	1) Partially uses Internet resources, cloud and mobile services for the search, storage, processing, protection and dissemination of information 2) cannot use the database in practice; 3)Cannot test the used hardware and software; 4) Finds difficult to use text editors to create and design text documents (formatting, saving, copying fragments, etc.); 5) does not know how to apply the acquired skills: to plot the functions specified in the table and create diagrams in the spreadsheet.	1) Uses Internet resources, cloud and mobile services for the search, storage, processing, protection and dissemination of information 2) Partially uses the database in practice; 3) Cannot test the used hardware and software; 4) Finds difficult to use text editors to create and design text documents (formatting, saving, copying fragments, etc.); 5) hesitantly applies the acquired skills: to plot the functions specified in the table and create diagrams in the spreadsheet;	1) Uses Internet resources, cloud and mobile services for the search, storage, processing, protection and dissemination of information 2) Uses the database in practice; 3) Can test the used hardware and software; 4) Uses text editors to create and design text documents (formatting, saving, copying fragments, etc.); 5) Partially applies the acquired skills: to plot the functions specified in the table and create diagrams in the spreadsheet;	1) Uses Internet resources, cloud and mobile services for the search, storage, processing, protection and dissemination of information 2) Uses the database in practice; 3) Can test the used hardware and software; 4) Uses text editors to create and design text documents (formatting, saving, copying fragments, etc.); 5) Applies the acquired skills: to plot the functions specified in the table and create diagrams in the spreadsheet;
LO 4	Uses varieties of information and	1) does not use modern software,	1) Partly uses modern software,	1) Uses modern software, does not	1) Uses modern software, does not

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communication technology in personal performance: internet sources, cloud and mobile services of searching, storing, recycling, protecting and sharing information.	does not analyze medical data using various special software and does not interpret the results; 2) does not use the information resources of the society and electronic means of communication in educational and practical activities; 3) does not use presentation graphics tools when preparing and conducting oral materials 4) does not create cloud data stores 5) does not know how to use software tools designed to work with this type of information and is guided by their compliance with the task	does not analyze medical data using various special software and does not interpret the results; 2) Partly uses the information resources of the society and electronic means of communication in educational and practical activities; 3) Partly uses presentation graphics tools when preparing and conducting oral materials 4) hardly creates cloud data stores 5) does not know how to use software tools designed to work with this type of information and is guided by their compliance with the task	analyze medical data using various special software and does not interpret the results; 2) Uses the information resources of the society and electronic means of communication in educational and practical activities; 3) uses presentation graphics tools when preparing and conducting oral materials 4) creates cloud data stores 5) Partly uses software tools designed to work with this type of information and is guided by their compliance with the task	analyze medical data using various special software and does not interpret the results; 2) Uses the information resources of the society and electronic means of communication in educational and practical activities; 3) uses presentation graphics tools when preparing and conducting oral materials 4) creates cloud data stores 5) Uses software tools designed to work with this type of information and is guided by their compliance with the task

10.2.	**Criteria for evaluating teaching methods and technologies**				
	Check list for practical lesson				

№	**Criteria for evaluation**	**Level**			
		excelent	**good**	**satisfactory**	**unsatisfactory**
1	**Oral survey**	**30-25**	**25-15**	**15-10**	**< 10**
1.1	Knowledge of basic terms and definitions on the topic under consideration	10-10	10-8	5-5	< 5
1.2	The ability to determine the relationship of the topic under consideration with the future profession, conducts specific examples	10-10	5-5	5-3	< 3
1.3	Links to additional literary sources	10-5	5-2	5-2	< 2
2	**Solve problems**	**70-60**	**60-50**	**50-40**	**< 40**
2.1	Unit of measurement of information	20-15	20-15	20-10	< 20
2.2	Transfer numbers from one system to another	30-25	20-18	20-15	< 10
2.3	Be able to use special software for solving problems	20-20	20-17	10-5	< 10
3	Individual task	**70-60**	**60-50**	**50-40**	**< 40**
3.1	Execution required tasks	20-15	20-15	20-10	< 20
3.2	Completing additional tasks	30-25	20-18	20-15	<10
3.3	Attraction of information from additional sources	20-20	20-17	10-5	< 10

Check list for SIW

SIW I	min	max
creating flowcharts	15	30
creating database	25	50
compiling the glossary (practical class themes 1-3)	5	10
for preparation crossword (practical class themes 1-3)	5	10
Total	50	100
SIW II	**min**	**max**
creating presentation	15	30
creating of MCQs	25	50
compiling the glossary (practical class themes 4-6)	5	10
for preparation crossword (practical class themes 4-6)	5	10
Total	50	100
SIW III	**min**	**max**
Logical flowchart on this topic(practical class themes№7,8,9,10)	15	30
designing websites	25	50
compiling the glossary (practical class themes 7-10)	5	10
for preparation crossword (practical class themes 7-10)	5	10
Total	50	100
SIW IV	**min**	**max**
creating of video	15	30
creating of an emblem	25	50
compiling the glossary (practical class themes 11-12)	5	10
for preparation crossword (practical class themes 11-12)	5	10
Total	50	100
SIW V	**min**	**max**
Development of graphic objects on medicine(practical class themes 13-15)	30	70
creating of MCQs (practical class themes 13-15)	20	30
Total	50	100

Grade by letter system	Numeric equivalent of points	Percentage	Grade by traditional system
A	4,0	95-100	Excellent
A -	3,67	90-94	
B +	3,33	85-89	Good
B	3,0	80-84	
B -	2,67	75-79	
C +	2,33	70-74	
C	2,0	65-69	Satisfactorily
C -	1,67	60-64	
D+	1,33	55-59	
D-	1,0	50-54	
FX	0,5	25-49	Unsatisfactory
F	0	0-24	

11.	**Learning resources**
	databases, animation simulators, professional blogs, websites, other electronic reference materials (for example: video, audio, digests)

	Information system «Medicine»	https://online.zakon.kz/Medicine/

Electronic textbooks

1. Сапрыгина М.Б. Information and communication technology [Электронный ресурс]: учебное пособие / М.Б. Сапрыгина, К. Кудабаев. - Электрон. текстовые дан. (20.2Мб). - Алматы: [s.n.], 2017
2. А.Е.Жатканбаева, Информационное право (общая часть) [Текст] : учеб. пособие; КазНУ им. аль-Фараби. - Алматы: Қазақ ун-ті, 2015. - 147с http://elib.kaznu.kz
3. Информатика и информационные технологии в профессиональной деятельности [Текст]: учебник/ А.А. Бабкин, С.В. Видов, С.А. Грязнов и др.; под ред.: В.П. Корячко, М.И. Купцов; Федеральная служба исполнения наказаний, Академия права и управления.- Рязань: Академия ФСИН России, 2016.- 354 с. http://elib.kaznu.kz
4. Қ.Ж. Құдабаев. «Информатика» Оқу құралы. Алматы, «Эверо», 2020ж. 216б. https://elib.kz/ru/search/read_book/328/
5. Ricklefs V.P. Basics of Informatics: Educational manual for medical specialties of higher educational.– Almaty: Publishing house «Эверо», 2020.– 242p https://elib.kz/ru/search/read_book/363/
6. К.Ж.Кудабаев, З.С.Халметов, А.А.Мауленова, З.М. Абдримова, А.С.Байдилдаева. Учебно-методическое пособие «Сборник тестовых заданий по информатике». Алматы, «Эверо», 2020г., 150 с. https://elib.kz/ru/search/read_book/2948/
7. Urmashev B.A. Information-communication technology: Textbook/ Ministry of education and science of the Republic of Kazakhstan, Association of higher educational institutions of Kazakhstan. - Almaty: Bookprint, 2016. - 413 p. http://rmebrk.kz/

Laboratory physical resources

Computers and other electronical devices

Special programs

1	MS office (Word. Excel. Access. Power point)
2	Adobe Photoshop, Bandicam, Movie maker, Videopad etc.
3	STATISTICA

Main Literature

1. Нурпеисова Т. Б. Информационно-коммуникационные технологии: учеб. пособие.-2017
2. Хакимова Т. Практикум по курсу "Основы информатики": уч. пособие. - Алматы : "NURPRESS".-2013
3. Urmashev B.A. Information-communication technology: Textbook /B.A. Urmashev.-Almaty: Association of higher educational instutions of Kazakhstan, 2016
4. Koshimbaev Sh.K. Automation of standard technological processes [Text]: textbook / Sh.K.Koshimbaev, B.A. Suleimenov.-Almaty:[s.n.], 2016.- 266p.
5. Methods of teaching computer science [Текст]: Textbook / E. Bidaibekov [and etc.].- Almaty:[s.n.], 2016.- 359p
6. Nurpeisova T.B. Information andCommunication Technologies: Text-book / T.B. Nurpeisova, I.N. Kaidash.- Almaty: Bastau, 2017.- 480 p.
7. Manapov N.T. Computer chemistry [Текст] : textbook/ N.T. Manapov.- Almaty: Association of higher educational institutions of Kazakhstan, 2016. - 312 p

Additional Literature

1. Қойбағарова Т.Қ. Информатика: оқу-әдістемелік құралы - Түзет, толықт. 2-бас. - Алматы: Эверо.-2014
2. Информатикадан тест тапсырмаларының жинағы: оқу-әдістемелік құрал / Қ. Ж. Құдабаев [т.б.]. - Алматы: Эверо.-2014

Electronic database

№	Title	Link
1	SKMA Repository	http://lib.ukma.kz/repository/
2	Republican Interuniversity Electronic Library	http://rmebrk.kz/
3	Student Advisor	http://www.studmedlib.ru/
4	Open University of Kazakhstan	https://openu.kz/kz
5	Law (access in the reference and information sector)	https://zan.kz/ru
7	Scientific Electronic Library	https://elibrary.ru/
8	Open Library	https:// kitap.kz/
9	Thomson Reuters	www.webofknowledge.com

ONTÚSTIK-QAZAQSTAN **MEDISINA AKADEMIASY** «Оңтүстік Қазақстан медицина академиясы» АҚ	SKMA 1979	SOUTH KAZAKHSTAN **MEDICAL ACADEMY** АО «Южно-Казахстанская медицинская академия»	
Department of "Medical Biophysics and Information Technology"			044-35/16 ( )
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10	ScienceDirect	http://www.sciencedirect.com
11	Scopus	https://www.scopus.com/
12	Digital library «Aknurpress»	https://aknurpress.kz/login

12.	**Course policy**

Requirements for studying this course:
1. Do not miss classes without reason;
2. Do not be late for classes;
3. Come to classes in uniform;
4. To be active during the practical classes;
5. To prepare for lessons;
6. Take the students independent work and prepare it timely;
7. Not to do other things during lessons;
8. To be tolerant, polite and friendly to students and teachers;
9. Be careful to the department equipment and furniture.
10. The midterm control of students' knowledge is carried out twice during the semester on the 7th and 14th weeks of theoretical training with the setting of the results of midterm controls in the educational journal of progress and the electronic journal, taking into account penalty points for missing lectures (missed lectures in the form of penalty points are subtracted from the assessments of the midterm control). The penalty point for missing 1 lecture is 1.0 point. A student who does not show up for midterm control without an important reason is not allowed to take the course exam. The results of midterm control are sent to the dean's office in the form of a report at the end of the control week.
11. SIW mark is given at the SIWT lesson, according to the schedule, in the educational register and electronic register also, taking into account the penalty points for missing SIWT lessons. The penalty point for missing 1 SIWT lesson is 2.0 points.
12. Digital educational resources and digital content are placed by the teacher in the "Tasks" module for the attached academic group (stream). All types of training videos are linked to the department's cloud storage.
13. Module "Tasks" AIS Platonus is the main platform for distance learning and placement of all training and teaching materials.

13.	**Academic policy based on the moral and ethical values of the academy**
	https://ukma.kz/
	Академическая политика АО ЮКМА. П. 4 Кодекс чести студента http://surl.li/eroik
	The policy of grading the discipline

Discipline Grading Policy
Student's final mark (FM) is given at the end of the course, and calculate as a sum of the admission rating mark (ARM) and the final control mark (FCM) and is given according to the point-rating letter system.

$$FM=ARM+FCM$$

Admission rating mark (ARM) is equal to 60 points or 60% and includes: the current control mark (CCM) and midterm control mark (MCM).
The current control mark (CCM) is the average score for practical lessons and SIW.
The midterm control mark (MCM) is the average score of the two midterm controls.
The admission rating mark (60 points) is calculated via the formula:

$$MCM_{average} \times 0.2+CCM_{average} \times 0.4$$

Final control (FC) is carried out in the form of testing and the student can get 40 points or 40% of the total mark.
When testing, the student is asked 50 questions.
Calculation of final control is carried out as follows: If the student correctly answered 45 questions out of 50, it will be 90%.

$$90 \times 0.4 = 36 \text{ points.}$$

The final mark is calculated if the student has positive marks both in the admission rating (AR) = 30 points or 30% or more, and in the final control (FC) = 20 points or 20% or more.

$$\text{The final grade (100 points)} = MCM_{average} \times 0.2+CCM_{average} \times 0.4+FC \times 0.4$$

A student who has received an unsatisfactory mark for one of the types of controls (MK1, MK2, CC $_{average}$) is not allowed to the exam.

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	Penalty points are subtracted from the average score of the current control.

14.	**Approval and revision**			
Approval date		**Protocol No.**	**Head of the Department**	**Signature**
« 16 » 05 202 3 y.		№ 12	M.B.Ivanova	
Revision date		**Protocol No.**	**Chairman of the EPC**	**Signature**
« 9 » 06 202 3 y.		№ 10	B.O.Torlanova	
Revision date		**Protocol No.**	**Head of the Department**	**Signature**
«___»____202__ y.		№ ___		
Revision date		**Protocol No.**	**Chairman of the EPC**	**Signature**
«___»____202__ y.		№ ___		

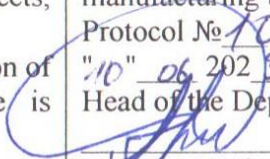|	
ONTÚSTIK-QAZAQSTAN **MEDISINA AKADEMIASY** «Оңтүстік Қазақстан медицина академиясы» АҚ	SOUTH KAZAKHSTAN **MEDICAL ACADEMY** АО «Южно-Казахстанская медицинская академия»
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Protocol of approval of the subject "ICT" with other subjects
for the 2023-2024 academic year

Coordination disciplines	Proposals for changes in the proportions of the material, the order of presentation, etc.	Protocol numbers and meeting dates of the corresponding departments
1	2	3
1. Computer - engineering graphics in design	The ICT course deals with the processing of numerical data and their visualization through the use of Excel spreadsheets, Statistica. The content and sequence of presentation of the material on the ICT discipline is considered appropriate	Reviewed at the meeting of the Department of «Pharmaceutical manufacturing technology», Protocol № 10 "10" 06 2023 y . Head of the Department _____ to t., ass. Professor Arystanbaev K.E

Head of the Department «Pharmaceutical manufacturing technology», PhD, ass. Professor   Arystanbaev K.E