ONTÚSTIK-OAZAOSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ Оңтүстік Қазақстан медицина академиясы» АҚ	дицинская академия»
Department "Medical Biophysics and Information Technologies"	№ 35-11(И)-2024
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Syllabus

Department "Medical Biophysics and Information Technologies"

Work program of the course "Information and Communication Technologies" Educational program 6B10116-«Pediatrics»

1.	General information about the course	3: 40.	K 35 00 60 111.
01.1	Course code: ICT 1105	1.6	Academic year: 2024-2025
1.2	Course name: Information and Communication Technology	1.7	Year: 1
1.3	Prerequisites: -	1.8	Term: 2
1.4	Postrequisites: Introduction to scientific research (public health and biostatistics)	1.9	Number of credits (ECTS): 5
1.5	Cycle: General Education Subjects	1.10	Component: Mandatory component
2.	Course content	3. Kr	Si Mis Se Mr. Kr Sk.
archite netwoi	course covers foundational concepts of inform ecture of computer systems, types of software, rking, cybersecurity, internet technologies, cloudlogies, AI fundamentals and its applications.	database s	ystems, data analysis and managemen
3.	Form of summative assessment	, Vg. 6	00 "1: 1 3 TH, 55 90"
3.1	Testing	3.5	Coursework
3.2	Writing	3.6	Essay
3.3	Oral	3.7	Project
3.4	OSPE / OSCE	3.8	Other (specify)
4.	Objective of the course		
LO1	Explain the purpose, content, and developed technologies, and justify the choice of the most		
LO2	Explain methods for collecting, storing, and		
LO3	information and communication processes.  Describe the architecture of computer systems of key components.	and netwo	rks, including the purpose and function
LO4	Utilize Internet resources, cloud services, processing, and disseminating information.	and mobil	e applications for searching, storing
LO5	Apply software and hardware for computer sys store data.	tems and n	etworks to collect, transmit, process, and
LO6	Analyze and justify the choice of methods and t	ools for inf	Formation security.
LO7	Develop data analysis and management tools for	r various ac	ctivities using digital technologies.
LO 8	Demonstrate the ability to apply the theory, me use of basic intelligent software systems	thods, and	principles of artificial intelligence in the
5, 1		re related	to the course learning outcomes
	LO1 LO2 LO 1. Demonstrates knowledge	and unders	tanding of biomedical sciences for of the most common diseases in children
	LO3 LO4 LO 9. Owns information techno	logies, effe	ctively uses information in the field of nin the framework of his qualifications.
	LO6 LO7 LO 10. Applies scientific princi		

6.	Course Details	<u> </u>	26, 40. 17	St. 1.5	V.O.	24 31 7 14	- 44, 40
6.1			ll Academy, building arabi Square - 1, 5 <sup>th</sup>				
6.2	Number	Prac. lessons	7 1 1 0 0 1 V	SIWT	SH	No. So. S	IW
0.2	of hours	50	2/ Vio. 6/2	15		<del>\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ </del>	85
7.	Information abo		1 5 00	5 111.	11/2	CK VO.	2011
√o	Full nar		Academic degree	and posi	tion	Email a	ddress
	nova Marina Boris		PhD, professor	una posi		marina-iv@ma	
	manov Nurlan Ker	<del>                                     </del>	PhD, professor	, <u> </u>		nurlanormanov	
1/5	rdiyeva Meruyert		PhD, ass. prof.	147		meruert_berdie	
_ /	drimova Zakhira N		Master's degree, se	enior tea	- V	zakira75@mail	75 70
4 4 1 1	anbaeva Maral An		Master's degree, se			maral_81_19@	
	ulenova Akmaral		Master's degree, s			maral_tasken@	
	durahmanova Zha		Master's degree, s			zhanil15@mail	
~_ ~	idildaeva Akmaral		Master's degree, s			68.akmaral@m	
<b>8.</b>	Thematic plan	Saginacviia	T waster's degree, s	cinoi tea		oo.akmararwiii	анли
70.	Thematic plan	60 10.	1 24 00.	000	1	200	90. E
	1. K ch.	U.O. 60,717;			er	Forms/ Methods/ Technolog ies of teaching	Forms/ Methods of assessmen
Veek	Topic	Brie	ef content	Course	Number of hours	Forms/ Methods/ Fechnologies of	Forms/ Methods of ssessme
	30,11,11	C/4, Vg. OC		5		Fo Vec ie	Fo Me sse
<b>7</b> 0.	604 14	3 171, 35.	900 Kr 2,	Miles			
1			computer systems.	LO 1	3	Practical	MCQ,
	computer	Evolution	of computer		Wo.	class/	practical
	systems.		Architecture and		- 0	Discussion,	assignment,
		of components		LO 4	ch.	demonstrati	participation
	computer system		se of computer	LO 5		on,	in discussion
	26 W	9 30 110	ata representation	7 111.16	.1.	instruction,	/ According
40,.	KJ 34 W		outer systems.	000	1	completing	to tl
	7. 17 ch	Calculation	of metrics of	y. Og	, H	a practical	checklist
	10. TU - CV	productivity		20.	90,	assignment/	10. 3.60 4
19.	500 1114 1	system: sp	peed, efficiency,	(1)	90	Presentation	May So
	· OUNTEN		s, Amdahl's law,	1,100	80	, computer	K. Vo.
	13. Og. 1	CPU time.	7:00 YO. 15	SK. "	VO.	training,	ch. vs
	1,000	K 55 M	, 56, 711. T	SK	Wo.	specialized software	1 3/4
	Consultation	n Dagia alama	nts of flowshamts	102	1/4		Elavyahant
			ents of flowcharts.	LO 3 LO 4	1/4	SIWT /	Flowchart
	completing the		uilding flowcharts.		2, 7	SIW /	/According
7., "	individual	Examples of	HOWCHARTS	LO 5	1 , 9	Demonstrati	to the about
777,	assignment	8. O. H	1 2. My . Vi	, 9n.	KL	on,	checklist
	Davida	C Constitution of	Who was a series	2: 1	D. K	instruction /	60 YI)
. 00			wcharts describing	1 × 60	701.	Computer	Us. Son
~J.			ion of various	Wo.	Sp. 71	training,	, vo. o.
	computer	computer de	vices.	F. VS	60	Flowchart	M. 3.
	devices.	St. Wg.	60,717,77	CKII.	10.	software	2. My
4	Stage 1.	1000		2,	2.00	Lucidchart	MGC
2	Software.	Software.	Types of the	LO 1	3	Practical	MCQ,
	Operating	software,	purpose and	LO 2	5	class/	practical
	systems. Human		c. Basic concepts	LO 4	SK	Discussion,	assignment,
	computer	○ For US. Evol	ution of operating	LO 5		demonstrati	participation

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Skug Skug Skug Skug Skug	interaction	systems. Classification of operating systems, including for mobile devices. Classification of desktop applications. User interface as means of human-computer interaction. Usability of interfaces. Types of interfaces: command line interface, text interface, graphic interface. Determination of properties of an operating system. Operation with files and directories.	SKUS EL	Mains Sking	on, instruction, completing a practical assignment/ Presentation , computer training, specialized software	in discussion / According to the checklist
SKUS GO	Consultation on completing the individual assignment / Development of flowcharts of computer devices. Stage 2.	Basic elements of flowcharts. Rules for building flowcharts. Examples of flowcharts  / Creating flowcharts describing the operation of various computer devices.	LO 3 LO 4 LO 5	1/5	SIWT / SIW / Demonstrati on, instruction / Computer training, Flowchart software Lucidchart	Flowchart /According to the checklist
33 Sking Sking	Database systems	Bases of database systems: concept, characteristic, architecture. Development of database structure, creation of tables, forms, queries, reports (MS Access).	LO 1 LO 2 LO 4 LO 5 LO 7	krai krai krai krai	Practical class/ Discussion, demonstrati on, instruction, completing a practical assignment/ Presentation , computer training, specialized software	MCQ, practical assignment, participation in discussion / According to the checklist
Skusie Skusie	Consultation on completing the individual assignment  / Collecting, the analysis and structurization of data in the professional	Design and development of a multi-table database: creating tables (including lookup fields, OLE objects, input masks), queries, forms, reports (MS Access).  / Design and development of an individual multi-table database related to the future professional field.	LO 4 LO 5 LO 7	1/5 and 1/5 an	SIWT / SIW / Demonstrati on, instruction / Computer training, MS Access	Database /According to the checklist

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SKIN	environment. Stage 1.	SKILLIS GOLDINA	Sky	10:01	SOUTH	SKUUG.
L 4 S J.KL Sdu.KJ Skrasi Skrasi Skrasi	Data analysis. Data management	Basics of Data Analysis. Methods of data collection and data classification. Processing of numerical information, editing formulas and creation of charts in spreadsheet editors (MS Excel).	LO 1 LO 2 LO 4 LO 5 LO 7	1 5KU 3 69 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Practical class/ Discussion, demonstrati on, instruction, completing a practical assignment/ Presentation , computer training, specialized software	MCQ, practical assignment, participation in discussion / According to the checklist
ky skus	Consultation on completing the individual assignment / Collecting, the analysis and structurization of data in the professional environment. Stage 2.	Design and development of a multi-table database: creating tables (lookup fields, OLE objects, input mask), queries, forms, reports (MS Access)/ Design and development of an individual multi-table database related to the future professional field.	LO 4 LO 5 LO 7	1/4	SIWT / SIW / Demonstrati on, instruction / Computer training, MS Access	Database /According to the checklist
a.edu. graak g graak g g graak g g g g g g g g g g g g g g g g g g	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. Creation of a simple network configuration. IP addressing. Monitoring of a network. Analysis of traffic. Use of sniffers for the analysis of network packets.	LO 1 LO 2 LO 3 LO 4 LO 5	a edu krnan	Practical class/ Discussion, demonstrati on, instruction, completing a practical assignment/ Presentation , computer training, specialized software	MCQ, practical assignment, participation in discussion / According to the checklist
Maria e Akma e Akma e Akma e	Consultation on completing the individual assignment / Description of network topology of the healthcare	Requirements analysis based on the description of the healthcare facility. Designing the network topology. Documenting and justifying the decisions.	LO 1 LO 3 LO 4 LO 5	1/5	SIWT / SIW / Demonstrati on, instruction / Computer training, 10-Strike	Report and flowchart /According to the checklist

Department	t "Medic	al Biophy	sics an	d Inforr	nation To	echnolog	gies"	70.	Kr	$\mathcal{N}_{\underline{0}}$	35-11(И)	-2024
Syllabus of the	course '	'Informat	ion and	Comm	unication	n Techno	ologies"	AL	7.	5	page out o	of 20
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KINI	facility.	SK KUS SiGO GITT KT	SKU	10.	Network Diagram	2. Phillips
L 6 St J. K. L J. L J. L J. L J. L J. L J. L J. L J	Cybersecurity	Security risks of information and their classification. Malicious applications. Measures and means of information protection. The acts of the Republic of Kazakhstan governing legal relations in the sphere of information security. Electronic digital signature. Encryption.  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.	LO 4 LO 5	SKA	Practical class/ Discussion, demonstrati on, instruction, completing a practical assignment/ Presentation , computer training, specialized software	MCQ, practical assignment, participation in discussion / According to the checklist
4. 84. 84. 84. 84. 84. 84. 84. 84. 84. 8	Consultation on completing the individual assignment / Comparative analysis of antivirus means of information	Study of functionality of antivirus programs. Comparative analysis.	LO 4 LO 5 LO 6	1/5	SIWT / SIW / Demonstrati on, instruction/ Computer training,	Report /According to the checklist
1 Sking Skin	protection. Internet technologies	Basic Internet concepts. The Uniform Resource Locator (URL), its assignment and components. DNS server. Web technologies. E-mail. Message format. SMTP, POP3, IMAP protocols Creation of a website using the free website builder (Tilda or Mobirise).	LO 1 LO 2 LO 4 LO 5 LO 7	kus Kus Kus Kus Kus Kus Kus Kus Kus Kus K	Practical class/ Discussion, demonstrati on, instruction, completing a practical assignment/ Presentation , computer training, specialized software	MCQ, practical assignment, participation in discussion / According to the checklist
7.KT	Midterm control 1	Introduction to computer systems. Architecture of	LO 1 LO 2	1/4	Computer testing	Evaluation is carried out

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L SKILL	Preparation for midterm control 1	computer systems. Software. Operating systems. Human- computer interaction. Database systems, Data analysis. Data management. Networks and telecommunications. Cybersecurity. Internet technologies.	LO 3 LO 4 LO 5 LO 6 LO 7	7. Kr. 3. Kr. 13. Kr. 13. Skr.	(MCQ)	using a 100-point scale.
A Sking Skin	Cloud and mobile technologies	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.	LO 1 LO 2 LO 4 LO 5	skulg skulg skulg	Practical class/ Discussion, demonstrati on, instruction, completing a practical assignment/ Presentation , computer training, specialized software	MCQ, practical assignment, participation in discussion / According to the checklist
sylvisis	Consultation on completing the individual assignment / Searching for information related to specialty on the Internet, using cloud services for data storage and data processing	Searching for specialty-related information: researching current medical topics, searching for educational resources.  Using cloud services for data storage: creating a cloud storage account, collaboration work.  Using cloud services for data processing: data analysis, data visualization (Google sheets).	LO 5		SIWT / SIW / Demonstrati on, instruction / Computer training, Google sheets	Report /According to the checklist
	Multimedia technologies	Representation text, audio, video and graphical information in a digital format. Basic technologies for compression of information.  3-D representations of the virtual world and animation.	LO 1 LO 4 LO 5	4	Practical class/ Discussion, demonstrati on, instruction, completing	MCQ, practical assignment, participation in discussion / According to the

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7. KT	ria.edu.kl skria.edu.kl	Instruments of development of multimedia applications. Use of multimedia technologies for planning, descriptions of business processes and their visualization.  Creating presentations (Canva)	901/17 SKU	1 skus	a practical assignment/ Presentation , computer training, specialized software	checklist
Segnisedi Sylvas	Consultation on completing the individual assignment/ Creation of video files with use of programs: VideoPad, CapCut, Windows Movie Maker, etc. Stage 1	Choose a current medical topic. Research and script. Create a storyboard. Use video editing software. Record an edit. Publish.	LO 4 LO 5	1/5	SIWT / SIW / Demonstrati on, instruction / Computer training, video editing software (VideoPad, CapCut, Windows Movie Maker)	Video file and project / According to the checklist
	Smart technologies	Internet of things. Big data. Technology Block Chain. Use of Smart-services. Green technologies in ICT. Teleconferences. Telemedicine.	LO 1 LO 4 LO 5	a edu	Practical class/ Discussion, demonstrati on, instruction, completing a practical assignment/ Presentation, computer training, specialized software	MCQ, practical assignment, participation in discussion / According to the checklist
J.KL edu.KL skina.edu. skina.edu. skina.edu.	Consultation on completing the individual assignment / Creation of video files with use of programs: VideoPad, CapCut, Windows Movie Maker, etc. Stage 2	Choose a current medical topic. Research and script. Create a storyboard. Use video editing software. Record an edit. Publish.	LO 4 LO 5	1/4	SIWT / SIW / Demonstrati on, instruction / Computer training, video editing software (VideoPad, CapCut, Windows Movie	Video file and project / According to the checklist

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345	Introduction to AI	Basic concepts of AI. History and development of AI. Knowledge representation models. Fundamentals of AI research. Ethical Considerations in AI	LO 4 LO 5 LO 8	1 sking	Practical class/ Discussion, demonstrati on, instruction, completing a practical assignment/ Presentation, computer training, specialized software	MCQ, practical assignment, participation in discussion / According to the checklist
18. N.	Consultation on completing the individual assignment / Review of contemporary AI research	Studying recent articles and publications on the latest achievements in artificial intelligence.	LO 1 LO 4 LO 5 LO 8	1/5	SIWT / SIW / Demonstrati on, instruction / Computer training	Report /According to the checklist
14. 10. 14. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15	Introduction to AI tools and platforms. Large Language Models.	Studying different AI tools and platforms. Practical use of various tools and platforms for working with AI. Introduction to Large Language Models (LLM). Using LLMs for text generation and summarization.	LO 4 LO 5 LO 8	sknig.	Practical class/ Discussion, demonstrati on, instruction, completing a practical assignment/ Presentation , computer training, specialized software	MCQ, practical assignment, participation in discussion / According to the checklist
du.	Consultation on completing the individual assignment / Comparative analysis of AI tools	Comparing the functionality and effectiveness of various artificial intelligence tools and platforms.	LO 1 LO 4 LO 5 LO 8	1/5	SIWT / SIW / Demonstrati on, instruction / Computer training	Report /According to the checklist
1 SK	Generative AI tools.	Overview of Generative AI tools. Creating generative art and music using AI tools. Studying possible experiments with various generative art	LO 4 LO 5 LO 8	SKU19	Practical class/ Discussion, demonstrati on,	MCQ, practical assignment, participation in discussion

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L SKU	KI SKUJA	tools to create images and music.	9.691.47 97.147 347.47	1.K1 1.K1 1.K1 1.K1	instruction, completing a practical assignment/ Presentation , computer training, specialized software	/ According to the checklist
M.K. K. Skills	Consultation on completing the individual assignment / AI and Society	Conducting research and creation a video report about impact of AI on various aspects of public life.	LO 4 LO 5 LO 8	1/4	SIWT / SIW / Demonstrati on, instruction / Computer training, interview	Video report with research results / According to the checklist
Market Skind	Information technologies in medicine and pharmacy	The software for the solution of tasks of the specialized professional sphere. Modern IT trends in medicine and pharmacy. Use of search engines and electronic resources in the professional sphere.  Using STATISTICA software for processing medical and pharmaceutical data.	Lo 4 LO 5 LO 7	May Skul	Practical class/ Discussion, demonstrati on, instruction, completing a practical assignment/ Presentation , computer training, specialized software	MCQ, practical assignment, participation in discussion / According to the checklist
.KY.KY SKNO	Midterm control 2 / Preparation for midterm control 2	Cloud and mobile technologies. Multimedia technologies. Smart technologies. Introduction to AI. Introduction to AI Tools. Generative AI Tools. Information technologies in medicine and pharmacy	LO 3 LO 4 LO 5 LO 6	1/5	Computer testing (MCQ)	Evaluation is carried out using a 100-point scale.
	Prospects of development of ICT	Prospects of development in the sphere of the IT market: development of the free software. Development of necessary infrastructure of electronic payments and logistics. Prospects of development of Etechnologies.		ia.edi kma	Practical class/ Discussion, demonstrati on, completing a practical assignment/ Presentation , computer training,	MCQ, practical assignment, participation in discussion / According to the checklist

«Оңтүс	ONTÚSTIK-QAZAQSTAN MEDISINA AKADEMIASY тік Қазақстан медицина академиясы» АҚ	SKMA -1577-	SOUTH KAZAKHSTAN MEDICAL ACADEMY AO «Южно-Казахс	танская мед	цицинская а	кадемия»	90
Don	ortmont "Medical Rionhygics and Infor	motion 7	Fachnologies"	117	Mo	25 11/IX	7 202

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Consultation Conducting research and LO<sub>4</sub> 1/5 **SIWT** Video report on creation a video report about LO<sub>5</sub> completing the SIW / with research individual impact of AI on various LO8 results Demonstrati assignment aspects of public life. According to on. instruction / the checklist AI and Society Computer training, interview Exam preparation and conducting **Teaching Methods and Assessment Forms** 9.1 Practical class Discussion, demonstration, instruction, completing a practical assignment/ Presentation, computer training, specialized software MCQ, practical assignment, participation in discussion / According to the checklist SIWT / SIW Flowchart, Database, Report and flowchart, Report, Video file and project, 9.2 Video report with research results / According to the checklist 9.3 Midterm control Computer Testing (MCQ). Evaluation is carried out using a 100-point scale. 10. **Assessment criteria** Criteria for assssing course learning outcomes 10.1. Unsatisfactory Excellent LO **Learning outcome** Satisfactory Good Unable to explain **Explains** Clearly and ac-LO1 Explain the Can explain the the curately explains purpose, content, the purpose and purpose and con purpose, content, development content of ICT. tent of ICT in ge and main trends the purpose, conand Incorrectly neral terms. Has a of ICT well. Able tent, and developtrends information and identifies basic understand iustify ment trends of to the communication development ding of develop ICT. Confidently choice trends. Unable to technologies, and ment trends, but technology and convincingly for justify the choice justify the choice with some inaccu solving tasks. selects the most of the most suitable of technology for racves. Justifies though with some suitable technology solving specific the choice minor technologies for for solving specific tasks. technology at a inaccuracies. solving specific tasks basic level. tasks LO<sub>2</sub> Explain Incorrectly exp-Explains **Explains** Fully methods and the the for collecting, lains methods for methods methods accurately in and storing, and collecting, storgeneral terms but ways explains methods to implement processing ing, and processwith errors. Can for collecting, sing information. processes information, describe the basic well, storing, and and ways to implement Does though processing not ways some information. information and understand how implementing aspects may processes, though Confidently communication implement require to information and with clarification. describes ways to processes some communication shortcomings. implement processes. processes. LO<sub>3</sub> Clearly Describe the Unable to accura-Has a general Describes the architecture tely describe the understanding of architecture, accurately of computer systems architecture system and netpurpose, and describes the work architectuand networks, computer systems functions of key architecture including the and networks. but makes components well, computer systems

mistakes. Can de-

though there are

and networks, as

Makes errors in

purpose

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1 3/4	functions of key components	identifying the purpose and functions of components.	scribe key compnents, though not always accurately.	minor inaccuracies.	well as the functions of all key components.
LO4	Utilize Internet resources, cloud services, and mobile applications for searching, storing, processing, and disseminating information	Unable to effectively utilize internet resources, cloud services, and mobile applications.	Can use these tools at a basic level but with limited effectiveness.	Confidently uses internet resources and applications, though there is room for improvement.	Effectively and confidently uses all listed tools to accomplish tasks.
LO5	Apply software and hardware for computer systems and networks to collect, transmit, process, and store data	Unable to properly use software and hardware.	Can use software and hardware, but with limited effectiveness.	Confidently applies software and hardware, though there are minor shortcomings.	Fully proficient in applying software and hardware to accomplish all tasks.
LO6	Analyze and justify the choice of methods and tools for information security	Unable to analyze or justify the choice of methods and tools.	Can perform a basic analysis and justification, but with errors.	Analyzes and justifies choices well, though there are some shortcomings.	Thoroughly analyzes and convincingly justifies the choice of the most appropriate methods and tools.
LO7	Develop data analysis and management tools for various activities using digital technologies	Unable to develop effective tools for data analysis and management.	Can develop basic tools, but with limited functionality.	Develops functional tools, though improvements.	Develops high- quality and effective tools for data analysis and management.
LO8	Demonstrate the ability to apply the theory, methods, and principles of AI in the use of basic intelligent software systems	Does not demonstrate understanding or ability to apply AI theory and methods.	Understands basic principles but struggles to apply them.	Confidently applies AI theory and methods, though with some inaccuracies.	Fully and accurately applies AI theory, methods, and principles in the use of software systems.

# 10.2. Criteria for assessing

## **Checklist for assessing practical class**

Form of Work	Criterion	Description	Points (max 100)
ch pools	o Ku	All answers are correct	17-20
sting (20 ints)	Quality of Answers  Partially correct answers	Most answers are correct, but there are errors	12-16
rest (2 poi		Partially correct answers	7-11
Kr Z SI ZW	J. C. M. K.	Many incorrect answers	0-6

ONTÚSTIK-OAZAOSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АК ОМОТОВ ТОТОВ ВООТН КАZАКНЯТАН МЕДІСАL АСАDEMY АО «Южно-Казахстанская медиц	инская академия»
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40000	10. KJ 24. W	Fully completed with correct results	50-55
Completion of Individual Computer Task (60 points)	Completeness of	Completed, but with minor errors	35-49
etic idi pu pu sk oin	Task	Partially completed with significant errors	20-34
ompletion Individual Computer Task (60 points)			0-19
	Adherence to	On time	5
D. A.	Deadlines	Late	0
3, 14, 1	7711. 35. OC	Active participation, constructive comments	5-10
E E	Activity in	Participation with minimal comments	3-4
Participation Discussion (20 points)	Participation	Passive participation or lack of constructive comments	0-2
tici Visc	2 1111	Clearly formulated and justified arguments	5-10
a I	Quality of	Arguments present but not always justified	3-4
SHA	Argumentation	Arguments absent or unconvincing	0-2
Checklist for ass	sessing SIW	24 Way 60 117. 1 The way 600 17.	1 3 1
SIW 1	10 SO 10 1	24 VS. 60 "1" 1" The VS. 60.	Kr 2
Form of Work	Criterion	Description	Points (max 100
Ses	Accuracy of the Flowchart	The flowchart is fully accurate and reflects all necessary components and processes	20-25
devic	KI SKIMO.	The flowchart is mostly accurate, but there are minor errors	15-19
puter t tool tts)	911/KT 2, 2KUI	The flowchart has significant errors, with some components and processes missing	5-14
oin ar	o Mr. Kr 24	The flowchart is inaccurate or incomplete	0-4
Flowchart of computer devices (Lucidchart tool) (40 points)	Readability and Design	The flowchart is clearly designed in Lucidchart, all elements are easily readable and logically connected	10-15
owcha		The flowchart is generally readable, but there are minor design flaws	5-9
13. E. C.		Readability and design hinder understanding of the flowchart	0-4
skusins egn	7.K. X. SKUI	All necessary tables are created, properly structured, and relationships between tables are established	15-20
J SKNOWS	Tables	Tables are created, but there are errors in structure or not all relationships are correctly set	10-14
(cess	19. 9.600 917.KT	Tables are partially created, with significant errors in structure and relationships	5-9
S. t. nts	K1, 35, 39,	Tables are missing or incorrect	0-4
ase (MS A (60 points)	2 Kullis Gan	All necessary forms are created, functional, and user-friendly	7-10
Database (MS Access) (60 points)	Forms	Forms are created, but their functionality or design needs improvement	4-6
	1. 1 ch v	Forms are partially created or incorrectly designed	
ex Kwo. se	Queries	Queries are correct, efficiently retrieve and process data	
	Queries	Queries are created but work inefficiently or contain errors	5-9

segning of skill	rugis eggniki ki si skurgis eggnik	I SKUMBIELEUNIKI SKUM
«Онт	ONTÚSTIK-OAZAOSTAN MEDISINA AKADEMIASY густік Қазақстан медицина академиясы» АҚ	о-Казахстанская медицинская академия»
, D	epartment "Medical Biophysics and Information Technologie	es" № 35-11(И)-2024
Sylla	bus of the course "Information and Communication Technology	ogies" 13 page out of 20
2, 14, 20	2, 1/2 8, 1/2, 1/2 8kg	Vo. 60 111, 1 1 11, 13. 30,
2 1/0 3 Ex	Queries are partially cre	eated or incorrect 0-4
	Donorts are greated on	d accurately display quary

SKULIS EG	697.17 3 3 2 40	Queries are partially created or incorrect  Reports are created and accurately display query results and data	0-4 10-15
KT 2KWS	Reports	Reports are created, but their content or format needs improvement	5-9
W: 1 - ck	1, 3. On 1/h	Reports are missing or incorrect	0-4
SIW 2	KI, VS. 500"	Fr. 2, 14, 30, 10, 11, 24, 40, 6	
Form of Work	Criterion	Description	Points (max 100)
My Jeggn	KY S. SKULUSIS	The network topology is clearly described with all necessary details, covering the entire office building	15-20
of the	Clarity and Detail of Description	The description is mostly clear but lacks some details	10-14
53 C	EC 111.11 SX	The description is vague or missing significant parts	5-9
olog v	D. 60, 17. L. 1	The description is unclear or incomplete	0-4
chart of network topology of healthcare facility Strike Network Diagram tool) (50 points)	Way Soughir K	The flowchart accurately represents the network topology as described	15-20
network to thcare faci twork Diag (50 points)	Accuracy of the Flowchart	The flowchart is mostly accurate but contains minor errors	10-14
of ne nealth Netw (5	Flowchart	The flowchart has significant errors or omits key elements	5-9
urt Bike		The flowchart is inaccurate or incomplete	0-4
Flowchart I (Strike	Justification of	The choices for network design are well-justified with logical reasoning	5-10
TE SKING.	Decisions	Justification is provided, but it requires improvement	3-4
11/2 / 3/1/1	3. 90. Kr	Justification is missing or unconvincing	0-2
to si	Kura is squirk	The functionality of antivirus programs is thoroughly and correctly studied	15-20
mean	Study of Antivirus Functionality	The functionality is studied, but there are omissions or minor errors	10-14
virus		The functionality is partially studied with serious errors	5-9
"Comparative analysis of anti-virus mear information protection" (MS Word) (50 points)		The functionality is not studied or the work is incorrect	0-4
ysis of anti protection' /ord) ints)		The comparative analysis of antivirus programs is clear, logical, and well-founded	15-20
ve analysis o nation prote (MS Word) (50 points)	Comparative Analysis	The analysis is conducted, but with insufficient detail or errors	10-14
arative anal nformation (MS V (50 po	Analysis	The analysis is partially conducted or has significant errors	5-9
int int	7 %, vg. 60	The analysis is missing or completely incorrect	0-4
Com	1.K1 2K, 440.0	The report is clearly presented, includes all necessary elements, tables, or diagrams	5-10
Report "	Quality of Report Presentation	The presentation is generally good, but there are minor issues	3-4
Rag skilling		The presentation makes it difficult to understand the content of the report	0-2

ONTÚSTIK-OAZAOSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ  ОНТОБЛІКТІКТІК ОАДАОБТАН  ОНТОБЛІКТІКТІКТІКТІКТІКТІКТІКТІКТІКТІКТІКТІКТІ	цинская академия»
Department "Medical Biophysics and Information Technologies"	№ 35-11(И)-2024
Syllabus of the course "Information and Communication Technologies"	14 page out of 20

Form of Work	Criterion	Description	Points (max 100
ated Id	Constitution for	Relevant information on current medical topics an educational resources is found	d 30-40
on rela g clou data	Searching for Specialty-Related	Information is mostly relevant but has mino omissions	or 20-29
d iii ti	Information	Search is incomplete or contains minor errors	10-19
matic usin and	2/ Wo 60, 7	Search is not done or is completely incorrect	0-9
infor ernet, orage ing" ord)	Using Cloud	Account is created, cloud collaboration i organized, and requirements are met	s 14-20
eport " Searching for information related to specialty on the Internet, using cloud services for data storage and data processing" (MS Word) (100 points)	Services for Data Storage	Account is created but has minor issues i collaboration	n 7-13
	60 M.F. 1. X	Cloud work is partially completed or has errors	0-6
Report "Searching for information related to specialty on the Internet, using cloud services for data storage and data processing" (MS Word) (100 points)	Using Cloud	Data analysis and visualization are done using Google Sheets	g 30-40
ort " speci	Using Cloud Services for Data	Data analysis and visualization are done, bu contain errors	20-29
t to	Processing	Data analysis is partial or has significant errors	10-19
3. C. Y. V.	er Wo Go	Data analysis is not done or is done incorrectly	0-9
SIW 4	1 St. Wa. 6	0 117. 1 St. 35. 60 11 1 2. 7	71, 3,0
etc.)	Topic Choice and	Topic is current, research is thorough, and script i written	s 30-40
aker,		Topic is chosen, but research or script need improvement	s 20-29
ie Ma	Research	Topic is chosen, but research is superficial an script has errors	d 10-19
deo File Vindows Movie Maker, 0 points)	Kur usies Egninik	Topic is not chosen or research and script ar completely missing	e 0-9
ideo File Windows )0 points)	Storyboard is detailed and reflects the content of the video		of 14-20
Vidio Vid	Creation of Storyboard	Storyboard is created but requires improvements	7-13
Cut, (1	Storyboard	Storyboard is partially done or does not reflect the content of the video	0-6
Vi VideoPad, CapCut, V (10	so gnik KJ 2 cky	Video is edited professionally, with good qualit recording and editing	30-40
Pag (C)	Use of Video Editing	Video is edited with minor errors	20-29
Video	Software	Video is edited, but quality of recording or editing is poor	10-19
771.67	2/2 Was 60, 111.	Video is not edited or edited poorly	0-9
SIW 5	ch. Vo. 60,"	1. 1 St. 3. 30 1/2 2. My	J. 7/11.
Form of Work	Form of Work Criterion Description		Points (max 100)
w of npor AI c.ch" S	Accuracy and	The latest and most relevant studies and publications are presented	15-20
"Review of Contempor ary AI Research" (MS Word)	Relevance of Information	Studies are presented but with outdated data or partially relevant information	
	2: YO. K.	Studies are incomplete or insufficiently current	5-9

ONTÚSTIK-OAZAOSTAN  MEDISINA  AKADEMIASY  «Оңтүстік Қазақстан медицина академиясы» АҚ  Оңтүстік Қазақстан медицина академиясы» АҚ	инская академия»
Department "Medical Biophysics and Information Technologies"	№ 35-11(И)-2024
Syllabus of the course "Information and Communication Technologies"	15 page out of 20

71, 43. 60.	11. 12. 14. 20	Information	is incorrect or miss	ing.	0-4
SKING. Je	Mit of Sky	In-depth	and substantial	analysis, clea	-4
KI SKING	Quality of Analysis	formulated Analysis is conclusions	1 / 2 / V		
111, KT 24, 24,	ingieredni.Kr		is superficial,	conclusions	are 0-4
L L L L L L L L L L L L L L L L L L L	Structus Egn	Thorough	comparison of of various AI tools	the function	nal 10-15
Report Comparative Analysis of AI Tools " (MS Word) (30 points)	Comparison of Functionality	Comparison inaccuracies	n is done but with	shortcomings	or 5-9
Report tive Anal; Tools " IS Word) 0 points)	JULIKY J SKILM	Comparison justified	n is superficial	or insufficien	itly 0-4
Report rative Anal Tools " (MS Word) (30 points)	3.600 971-KT 3		of the effectivenes	ss of AI tools	is 10-15
pal	Analysis of	Effectivene	ss is evaluated but n	ot fully justifie	d 5-9
Comj	Effectiveness	Effectivene unconvincing		incorrectly	or 0-4
Video report with research results " AI and Society" (VideoPad, CapCut, Windows Movie Maker, etc.) (40 points) (50 points)	T Skirus Go	In-depth research is conducted, covering various aspects of AI's impact on society			us 15-20
	Quality of Research  Quality of Video Report	Research is conducted but not all aspects are covered or there are gaps in the analysis			10-14
		Research is	d 5-9		
ts oci oci c.)		Research is not conducted or is poorly executed			
report with rese results AI and Society" ad, CapCut, Wi faker, etc.) (40 j (50 points)		Video report is well-structured, professionally edited, and presents all research findings			
" AI s Pad, Mak		Video report is created but contains minor errors or lacks structure or editing quality			ors 10-14
Vide (Video Movie		Video report is created but has major errors or weak structure  Video report is missing or poorly executed			5-9
VS. 600 11/4	1. 3. 44. 3.				0-4
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Computer testing	3 70	J. 90.	Kr St Wa	Max 100	Min 50
The testing is con	ducted on a computer.	10 2:00 YI	7. KT 24. W	90-100	Exellent
The test consists of			111. KJ 24.	70-89	Good
	ied out using a 100-poi	int scale.	SO YOUNG	50-69	Satisfactory
The duration of th	e test is 50 min.	<50		Unsatisfactory	
Final control	Va 60 117.	1 4	19. 60 11 K	1 3 1911 3	in ognith
Grading by letter Digital equi system poin			Percentage		ment according to aditional system
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ONTÚSTIK-OAZAOSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ Оңтүстік Қазақстан медицина академиясы» АҚ	дицинская академия»
Department "Medical Biophysics and Information Technologies"	№ 35-11(И)-2024
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D+	1,33	55-59	South 1 2 Mills
9 D-	1,0	50-54	· 90, 15 2, 1440
FX	0,5	25-49	and the state of t
T F C	111.0	0-24	unsatisfactory

#### **Learning resources Electronic databases** Title No Link https://e-lib.skma.edu.kz/genres SKMA Electronic Library Republican Interuniversity Electronic Library http://rmebrk.kz/ 3 «Aknurpress» Digital Library https://www.aknurpress.kz/ Electronic library "Epigraph" http://www.elib.kz/ Epigraph - portal of multimedia textbooks https://mbook.kz/ru/index/ Information and legal system "Zan" https://zan.kz/ru ЭБС IPR SMART https://www.iprbookshop.ru/auth Cochrane Library https://www.cochranelibrary.com/

#### **Electronic textbooks**

- 1. Сапрыгина М.Б. Information and communication technology [Электронный ресурс]: учебное пособие / М.Б. Сапрыгина, К. Кудабаев. Электрон.текст.дан. (20.2Мб). Алматы: [s.n.], 2017
- 2. Berdieva M. A. Information and communication technology [Электронный ресурс]: textbook /
- М. А. Berdieva, А. А. Maulenova. Электрон. текстовые дан. ( 27.0 Мб). Shymkent: [s. n.], 2023. 303 эл. опт. диск (CD-ROM).
- 3. Қ.Ж.Құдабаев, А.С.Байділдаева, З.М.Абдримова, А.А. Мауленова, З.С.Халметов. «Информатикадан тест тапсырмаларының жинағы» Оқу-әдістемелік құрал. Алматы, «Эверо» баспасы, 2020. 150 б. https://elib.kz/ru/search/read\_book/2949/
- 4. К.Ж.Кудабаев, З.С.Халметов, А.А.Мауленова, З.М. Абдримова, А.С.Байдилдаева. Учебнометодическое пособие «Сборник тестовых заданий по информатике». Алматы, «Эверо», 2020г., 150 с. https://elib.kz/ru/search/read book/2948/
- 5. Қ.Ж. Құдабаев. «Информатика» Оқу құралы. Алматы, «Эве-ро», 2020ж. 216б. https://elib.kz/ru/search/read\_book/328/
- 6. Ricklefs V.P. Basics of Informatics: Educational manual for medical specialties of higher educational.–Almaty: Publishing house «Эверо», 2020.—242р https://elib.kz/ru/search/read\_book/363/
- 7. Нурпеисова Т.Б., Кайдаш И.Н. Қазіргі сандық әлемдегі информатика Информатика в современном цифровом мире: оқу құралы. Алматы: «Бастау», 2021. 416 б. На двух языках. http://rmebrk.kz/book/1177090
- 8. 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/book/1165091

### Laboratory physical resources

- Desktop computers;
- Networking equipment;
- Storage devices;
- Whiteboard;
- Projector;
- Mobile devices (tablets and smattphones).

#### Software

- Microsoft Office (Word, Excel, Access, Power point);
- Lucidchart tool:
- Tild website bilder;

SOPPORT	о́нти́зтік-оаzaostan медізіна медізіна АКАДЕМІАSY «Оңтүстік Қазақстан медицина академиясы» АҚ «Оңтүстік Қазақстан медицина академиясы» АҚ	едицинская академия»
0. 6	Department "Medical Biophysics and Information Technologies"	№ 35-11(И)-2024
	Syllabus of the course "Information and Communication Technologies"	17 page out of 20

- Canva tool;
- Strike Network Diagram tool;
- VideoPad, CapCut, Windows Movie Maker, etc.;
- AI tools;
- 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 [Τεκcτ]: Textbook / E. Bidaibekov [and etc.].- Almaty:[s.n.], 2016.- 359 p.
- 6. Nurpeisova T.B. Information and Communication Technologies: Text-book / T.B. Nurpeisova, I.N. Kaidash.- Almaty: Bastau, 2017.- 480 p.
- 7. Manapov N.T. Computer chemistry [Tekct]: textbook/ N.T. Manapov.- Almaty: Association of higher educational institutions of Kazakhstan, 2016. 312 p 8.

#### Additional Literature

- 1. Қойбағарова Т.Қ. Информатика: оқу-әдістемелік құралы толықт.2-бас. Алматы: Эверо.-2014
- 2. Информатикадан тест тапсырмаларының жинағы: оқу-әдістемелік құрал- Алматы: Эверо.-2014

### 12. | Course Policy and Requirements

- **1. Attendance:** Regular attendance is mandatory. Students must attend at least 80% of the classes to qualify for the final examination. Participation in all scheduled activities, including practical tasks and SIWs is essential.
- **2. Assignments and Projects:** All assignments and projects must be submitted on time. Late submissions will incur penalties unless prior arrangements have been made with the instructor. Assignments must meet the specified criteria and be submitted in the required format.
- **3. Examinations and Assessments:** Two midterm assessments will be conducted during the semester, on the seventh and fourteenth weeks, respectively. Passing these midterm assessments is mandatory for eligibility to sit for the final exam. The results of the midterm assessments will be sent to the Dean's Office in the form of a report at the end of the assessment week. Both midterm controls will be conducted under strict examination conditions, and any form of academic dishonesty will result in severe consequences.
- **4. Grading Policy**: The final exam grade will be calculated as the sum of the current assessment grade and the final exam grade. The current assessment includes grades for each practical class, completion of student independent work, and results of midterm controls, accounting for 60% of the overall grade. The final exam accounts for 40% of the overall grade. To pass the course, students must achieve a minimum overall score of 50%.
- **5. Communication:** Students should regularly check the course's online platform (Platonus, Whatsapp chat) for announcements, assignment details, and other important information. Queries and communications should be directed through the official communication channels provided by the instructor.
- **6. Academic Integrity**: Students are expected to uphold the highest standards of academic integrity. Plagiarism, cheating, and other forms of academic dishonesty will not be tolerated and will result in disciplinary action.
- **7. Technology Requirements:** Students must have access to a computer with the necessary software installed. Reliable internet access is also required for completing online assignments and participating in virtual classes.
- **8. Behavioral Requirements**: Students are expected to show respect and courtesy towards both the

instructor and their classmates. Tolerance and appropriate behavior in the learning environment are required. Medical students must wear white coats and medical caps during classes.

9. Support and Resources: If you encounter difficulties with the course content or assignments, seek help

9. Support and Resources: If you encounter difficulties with the course content or assignments, seek help early. Resources such as office hours, tutoring sessions.

13. Academic police		moral and ethical values of the academy	
https://ukma.kz/		5 M 5 W 1 5 M	3 <sup>9</sup> 111, 111,
http://surl.li/eroik	2. 90.	T 24 Was 6 471, 14 8/2 WS.	60,111
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# Protocol of approval of the course "ICT" with other subjects for the 2024-2025 academic year

Coordination disciplines	Proposals for changes in the proportions of the material, the order of presentation, etc.	e order of dates of the corresponding	
	2	3	
Introduction to scientific research	The ICT course deals with the processing of numerical data and their visualization through the use of MS Excel, STATISTICA.  The content and sequence of presentation of the material on the ICT course is considered appropriate	Reviewed at the meeting of the Department of Medical Biophysics and IT Protocol № // "	
Ma. edu. kr. kr. ski	Kung en en ikr var en en ikr ekung en en ikr ekung en en ikr var ekung en ikr var ekung en ekung en ekung en ekung en ekung en ekung en ekung ekung en ekung eku	Reviewed at the meeting of the Department of Protocol No/> 202 4 y. Head of the Department	

Head of the Department Medical Biophysics and IT, PhD, ass. Professor

Chair of the Academic Committee

M.B. Ivanova.

Kozhahmetova R.N

ONTÚSTIK-OAZAOSTAN  MEDISINA  AKADEMIASY  AKADEMIASY  ONTÚSTIK-OAZAOSTAN  MEDICAL  ACADEMY		
«Оңтүстік Қазақстан медицина академиясы» АҚ АО «Южно Department "Medical Biophysics and Information Technologie Syllabus of the course "Information and Communication Technology		
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